

SEQUENCE LISTING

<110> Bhatia, Ajay
Skeiky, Yasir A.W.
Probst, Peter

<120> COMPOSITIONS AND METHODS FOR TREATMENT AND
DIAGNOSIS OF CHLAMYDIAL INFECTION

<130> 210121.469C8

<140> US

<141> 2001-04-23

<160> 599

<170> FastSEQ for Windows Version 3.0/4.0

<210> 1

<211> 481

<212> DNA

<213> Chlamydia trachomatis

<400> 1

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caaaaataaga	actctgcttt	catgcagcct	gtgaacgtat	ccgctgattt	agctgccatc	180
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gagaatagtc	ttcaagatcc	tacaaacaaa	cgtaatatca	atcccgatga	taaattggct	300
aaagtttttg	gaactgaaaa	acctatcgat	atgttccaaa	tgacaaaaat	ggtttctcaa	360
cacatcatta	aataaaatag	aaattgactc	acgtgttctt	cgtctttaag	atgaggaact	420
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<210> 2

<211> 183

<212> DNA

<213> Chlamydia trachomatis

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<211> 110

<212> DNA

<213> Chlamydia trachomatis

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<210> 4

<211> 555

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 Gln Ser His Arg
 35

<210> 8
 <211> 18
 <212> PRT
 <213> Chlamydia trachomatis

<400> 8
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 1 5 10 15
 Pro Phe

<210> 9
 <211> 5
 <212> PRT
 <213> Chlamydia trachomatis

<400> 9
 Leu Ala Leu Trp Asn
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<210> 10
 <211> 11
 <212> PRT
 <213> Chlamydia trachomatis

<400> 10
 Cys Cys Tyr Arg Val Asn His Asn His Ile Asp
 1 5 10

<210> 11
 <211> 36
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 <213> Chlamydia trachomatis

<400> 11
 Val Asp Val Ile Val Ile Asp Ser Val Ala Ala Leu Val Pro Lys Ser
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 Met Met Ser Gln
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<210> 12
 <211> 122
 <212> PRT
 <213> Chlamydia trachomatis

<400> 12
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 20 25 30

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Ile Ile Ala Arg Leu Gln Leu Asn Pro Glu Ala Arg Ala Ala Glu Leu
 35 40 45
 Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln Ser Asp Tyr
 50 55 60
 Val Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
 65 70 75 80
 Leu Ile Thr Ile His Ala Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
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 Lys Arg Lys Thr Ile Ala Gly Lys Lys Lys
 115 120

<210> 13
 <211> 20
 <212> PRT
 <213> Chlamydia trachomatis

<400> 13
 Asp Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys
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 Val Phe Gly Thr
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<210> 14
 <211> 20
 <212> PRT
 <213> Chlamydia trachomatis

<400> 14
 Asp Asp Lys Leu Ala Lys Val Phe Gly Thr Glu Lys Pro Ile Asp Met
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 Phe Gln Met Thr
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<210> 15
 <211> 161
 <212> DNA
 <213> Chlamydia trachomatis

<400> 15
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 cgcaaccgtt tctttcttcc caaactaaag caaatatggg a 161

<210> 16
 <211> 897
 <212> DNA
 <213> Chlamydia trachomatis

<400> 16
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 attaaggttg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttgtcg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
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ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggtgt ctgtagcatc 420
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gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
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<210> 17

<211> 298

<212> PRT

<213> Chlamydia trachomatis

<400> 17

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20     25     30
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
35     40     45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
50     55     60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
65     70     75     80
Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
85     90     95
Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
100    105    110
Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
115    120    125
His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
130    135    140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
145    150    155    160
Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
165    170    175
Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
180    185    190
Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
195    200    205
Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly
210    215    220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
225    230    235    240
Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
245    250    255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
260    265    270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
275    280    285
Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
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<210> 18

<211> 18

<211> 1256

<212> DNA

<213> Chlamydia trachomatis

<400> 21

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caagctctca	aatccttgct	ttgaataatc	cagatatttc	aaaaaccatg	ttcgataaat	180
tcacccgaca	aggactccgt	ttcgtactag	aagcctctgt	atcaaataat	gaggatatag	240
gagatcgcg	tcggttaact	atcaatggga	atgtcgaaga	atacgattac	gttctcgtat	300
ctataggacg	ccgtttgaat	acagaaaata	ttggcttgga	taaagctggg	gttatttgtg	360
atgaacgcgg	agtcacccct	accgatgcc	caatgcgcac	aaacgtacct	aacatttatg	420
ctattggaga	tatcacagga	aaatggcaac	ttgcccatgt	agcttctcat	caaggaatca	480
ttgcagcacg	gaatataggt	ggccataaag	aggaaatcga	ttactctgct	gtcccttctg	540
tgatctttac	cttccctgaa	gtcgcttcag	taggcctctc	cccaacagca	gctcaacaac	600
atctccttct	tcgcttactt	tttctgaaaa	atttgataca	gaagaagaat	tcctcgcaca	660
cttgcgagga	ggagggcgct	tgggaagacca	gttgaattta	gctaagtttt	ctgagcggtt	720
tgattctttg	cgagaattat	ccgctaagct	tgggttacgat	agcgatggag	agactgggga	780
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acgtggacgt	aagaagagcc	gttcataaag	cttgctttta	agggttggta	gttttacttc	900
tctaaaatcc	aaatggttgc	tgtgccaaaa	agtagtttgc	gtttccggat	agggcgtaaa	960
tgcgctgcat	gaaagattgc	ttcgagagcg	gcacgcgctg	ggagatcccg	gatactttct	1020
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agatttagat	agagcttggt	tagcaggtaa	actgggttat	atggttgctgg	gcgtgttagt	1140
tctagaatac	ccaagtgtcc	tccaggttgt	aatactcgat	acacttccct	aagagcctct	1200
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<210> 22

<211> 601

<212> DNA

<213> Chlamydia trachomatis

<400> 22

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caagctctca	aatccttgct	ttgaataatc	cagatatttc	aaaaaccatg	ttcgataaat	180
tcacccgaca	aggactccgt	ttcgtactag	aagcctctgt	atcaaataat	gaggatatag	240
gagatcgcg	tcggttaact	atcaatggga	atgtcgaaga	atacgattac	gttctcgtat	300
ctataggacg	ccgtttgaat	acagaaaata	ttggcttgga	taaagctggg	gttatttgtg	360
atgaacgcgg	agtcacccct	accgatgcc	caatgcgcac	aaacgtacct	aacatttatg	420
ctattggaga	tatcacagga	aaatggcaac	ttgcccatgt	agcttctcat	caaggaatca	480
ttgcagcacg	gaatataggt	ggccataaag	aggaaatcga	ttactctgct	gtcccttctg	540
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a						601

<210> 23

<211> 270

<212> DNA

<213> Chlamydia trachomatis

<400> 23

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tttgattctt	tgcgagaatt	atccgctaag	cttggttacg	atagcgatgg	agagactggg	180
gatttcttca	acgaggagta	cgacgacgaa	gaagaggaaa	tcaaaccgaa	gaaaactacg	240
aaacgtggac	gtaagaagag	ccgttcataa				270

<210> 24

<400> 24

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<210> 25
<211> 696
<212> DNA
<213> Chlamydia trachomatis
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<400> 25

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<210> 26
<211> 231
<212> PRT
<213> Chlamydia trachomatis
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<400> 26

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Gly	Ser	Glu	Val 35	Ser	Val	Ile	Glu 40	Ala	Ser	Ser	Gln	Ile 45	Leu	Ala	Leu
Asn 50	Asn	Pro	Asp	Ile	Ser	Lys 55	Thr	Met	Phe	Asp 60	Lys	Phe	Thr	Arg	Gln
Gly 65	Leu	Arg	Phe	Val 70	Leu	Glu	Ala	Ser	Val 75	Ser	Asn	Ile	Glu	Asp 80	Ile
Gly	Asp	Arg	Val 85	Arg	Leu	Thr	Ile	Asn 90	Gly	Asn	Val	Glu	Glu 95	Tyr	Asp
Tyr	Val	Leu	Val 100	Ser	Ile	Gly	Arg	Arg 105	Leu	Asn	Thr	Glu	Asn 110	Ile	Gly
Leu	Asp	Lys	Ala 115	Gly	Val	Ile	Cys	Asp 120	Glu	Arg	Gly	Val 125	Ile	Pro	Thr
Asp	Ala 130	Thr	Met	Arg	Thr	Asn 135	Val	Pro	Asn	Ile	Tyr 140	Ala	Ile	Gly	Asp
Ile	Thr	Gly	Lys	Trp	Gln	Leu	Ala	His	Val	Ala	Ser	His	Gln	Gly	Ile

145 150 155 160
 Ile Ala Ala Arg Asn Ile Gly Gly His Lys Glu Glu Ile Asp Tyr Ser
 165 170 175
 Ala Val Pro Ser Val Ile Phe Thr Phe Pro Glu Val Ala Ser Val Gly
 180 185 190
 Leu Ser Pro Thr Ala Ala Gln Gln His Leu Leu Leu Arg Leu Leu Phe
 195 200 205
 Leu Lys Asn Leu Ile Gln Lys Lys Asn Ser Ser His Thr Cys Glu Glu
 210 215 220
 Glu Gly Val Trp Lys Thr Ser
 225 230

<210> 27
 <211> 264
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 27
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 tacattaataa aacacaactg tcaggatcaa aaaaataaac gtaatatcct tcccgatgcg 180
 aatcttgcca aagtcttttg ctctagtgat cctatcgaca tgttccaaat gaccaaagcc 240
 ctttccaaac atattgtaaa ataa 264

<210> 28
 <211> 87
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 28
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 20 25 30
 Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys Gln
 35 40 45
 Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys
 50 55 60
 Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met Thr Lys Ala
 65 70 75 80
 Leu Ser Lys His Ile Val Lys
 85

<210> 29
 <211> 369
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 29
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 cctgaggcaa gagcctctga attaactgaa gaagaagtag gacgactgaa ctctctgcta 180
 caatcagaat ataccgtaga aggggatttg cgacgtcgtg ttcaatcgga tatcaaaaga 240
 ttgatcgcca tccattctta tcgaggtcag agacatagac tttctttacc agtaagagga 300
 caacgtacaa aaactaatte tcgtactcga aaaggtaaaa gaaaaacagt cgcaggtaag 360
 aagaaataa 369

<400> 30

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<211> 10
<212> PRT
<213> Artificial Sequence
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<400> 31

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<210> 32
<211> 53
<212> PRT
<213> Chlamydia trachomatis
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<400> 32

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<210> 33
<211> 161
<212> DNA
<213> Chlamydia trachomatis
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<400> 33

60

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 caaaaccggt tctttcttcc caaactaaag caaatatggg a 161

<210> 34
 <211> 53
 <212> PRT
 <213> Chlamydia trachomatis

<400> 34
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 Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile
 20 25 30
 Leu Phe Val Asn Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr
 35 40 45
 Lys Ala Asn Met Gly
 50

<210> 35
 <211> 55
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 35
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<210> 36
 <211> 33
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 36
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<210> 37
 <211> 53
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<400> 37
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<210> 38
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 <213> Chlamydia pneumoniae

<400> 38
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<210> 39
 <211> 16
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<400> 39

<210> 40

<211> 16

<212> PRT

<213> Artificial Sequence

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<223> made in the lab

<400> 40

<210> 41

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> made in the lab

<400> 41

<210> 42

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> made in the lab

<400> 42

<210> 43

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> made in the lab

<400> 43

[210] 44

<211> 509

<212> DNA

<213> Chlamydia

<400> 44

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cgccgtgggc gatttagcga aaaatgattc ttctattcaa gtacgcacat ctgcttatcg 180
tgctgcagcc gtgttgagga tacaagatct tgtgcctcat ttacgagttg tagtccaaaa 240
tacacaatta gatggaacgg aaagaagaga agcttggaga tctttatgtg ttcttactcg 300
gcctcatagt ggtgtattaa ctggcataga tcaagcttta atgacctgtg agatgtttaa 360
ggaatatcct gaaaagtgtg cggaagaaca gattcgtaga ttattggctg cagatcatcc 420
agaagtgcag gtagctactt tacagatcat tctgagagga ggtagagtat tccgggtcatc 480
ttctataatg gaatcggttc tcgtgccgg 509

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<210> 45

<211> 481

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (23)

<223> n=A,T,C or G

<400> 45

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ttgcaaccgc acgcgattga atgatacgca agccatttcc atcatggaaa agaacccttg 180
gacaaaaata caaaggaggt tcaactcctaa ccagaaaaag ggagagttag tttccatggg 240
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attgtcccca agcgaatttt gtctctgttt cagggatttc tctaattgt tctgtcagcc 360
atccgcctat ggtaacgcaa ttagctgtag taggaagatc aactccaaac aggtcataga 420
aatcagaaag ctcataggtg cctgcagcaa taacaacatt cttgtctgag tgagcgaatt 480
g 481

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<210> 46

<211> 427

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (20)

<223> n=A,T,C or G

<400> 46

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ataacacaga tcaaagaacg gccattcagt ttaggtctctg actcaacaaa acctatgtcc 120
tctaagccct gacacattct ttgaacaacc ttatgcccgt gttcgggata agccaactct 180
cgcccccgaa acatacaaga aacctttact ttatttctt tctcaataaa ggctctagct 240
tgcttttgct tcgtaagaaa gtggttatca tcgatattag gcttaagctt aacctctttg 300
atacgcaact ggtgctgtgc tttcttacta tctttttctt ttttagttat gtcgtaacga 360
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cgaattc 427

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<210> 47

<211> 600

<212> DNA

T.D. 240-243-04304

<213> Chlamydia

<220>

<221> unsure

<222> (522)

<223> n=A,T,C or G

<400> 47

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gatagtacag tccaagatat tttagacaaa atcacaacag acccttctct aggtttgttg 180
aaagctttta acaactttcc aatcactaat aaaattcaat gcaacgggtt attcactccc 240
aggaacattg aaactttatt aggaggaact gaaataggaa aattcacagt cacacccaaa 300
agctctggga gcatgttctt agtctcagca gatattattg catcaagaat ggaaggcggc 360
gttgttctag ctttggtagc agaaggtgat tctaagccct acgcgattag ttatggatac 420
tcatcaggcg ttcctaattt atgtagtcta agaaccagaa ttattaatac aggattgact 480
ccgacaacgt attcattacg tgtaggcggt ttagaaagcg gngtggtatg ggtaaatgcc 540
ctttctaatt gcaatgatat tttaggaata acaaactctt taatgtatct tttttggagg 600

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<210> 48

<211> 600

<212> DNA

<213> Chlamydia

<400> 48

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atgatgcagg aattaggtcc acactatctt tttttgtttc gcaaatgatt gatttttaaat 120
cgtttgatgt gtatactatg tcgtgtaagc ctttttgggtt acttctgaca ctagccccc 180
atccagaaga taaattggat tgcgggtcta ggtcagcaag taacactttt ttccttaaaa 240
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aagagcaaaa aactaagggtg tgcaaatcaa ctccaacgtt agagtaagtt atctattcag 360
ccttggaaaa catgtctttt ctagacaaga taagcataat caaagccttt tttagcttta 420
aactgttata ctctaatttt tcaagaacag gagagtctgg gaataatcct aaagagtttt 480
ctatttggtg aagcagtcct agaattagt agacactttt atggtagagt tctaaggagg 540
aatttaagaa agttactttt tccttgttta ctcgatattt taggtctaatt tcggggaaat 600

```

<210> 49

<211> 600

<212> DNA

<213> Chlamydia

<400> 49

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gatccgaatt cggcacgaga tgcttctatt acaattgggtt tggatgcgga aaaagcttac 60
cagcttattc tagaaaagtt gggagatcaa attcttgggtg gaattgctga tactattggt 120
gatagtacag tccaagatat tttagacaaa atcacaacag acccttctct aggtttgttg 180
aaagctttta acaactttcc aatcactaat aaaattcaat gcaacgggtt attcactccc 240
aggaacattg aaactttatt aggaggaact gaaataggaa aattcacagt cacacccaaa 300
agctctggga gcatgttctt agtctcagca gatattattg catcaagaat ggaaggcggc 360
gttgttctag ctttggtagc agaaggtgat tctaagccct acgcgattag ttatggatac 420
tcatcaggcg ttcctaattt atgtagtcta agaaccagaa ttattaatac aggattgact 480
ccgacaacgt attcattacg tgtaggcggt ttagaaagcg gtgtggtatg ggtaaatgcc 540
ctttctaatt gcaatgatat tttaggaata acaaatactt ctaatgtatc ttttttgagg 600

```

<210> 50

<211> 406

<212> DNA

<213> Chlamydia

<400> 50
 gatccgaatt cggcacgagt tcttagcttg cttaattacg taattaacca aactaaaggg 60
 gctatcaaatt agcttattca gtctttcatt agttaaacga tcttttctag ccatgactca 120
 tcctatgttc ttcagctata aaaatacttc ttaaaacttg atatgctgta atcaaattcat 180
 cattaaccac aacataatca aattcgctag cggcagcaat ttcgacagcg ctatgctcta 240
 atctttcttt cttctggaaa tctttctctg aatcccgcagc attcaaacgg cgctcaagtt 300
 cttcttgaga gggagcttga ataaaaatgt gactgccggc atttgcttct tcagagccaa 360
 agtccttgt acatcaatca cggctatgca gtctcgtgcc gaattc 406

<210> 51
 <211> 602
 <212> DNA
 <213> Chlamydia

<400> 51
 gatccgaatt cggcacgaga tatttttagac aaaatcacaa cagacccttc tctagggttg 60
 ttgaaagctt ttaacaactt tccaatcact aataaaattc aatgcaacgg gttattcact 120
 cccaggaaaca ttgaaacttt attaggaggga actgaaatag gaaaattcac agtcacaccc 180
 aaaagctctg ggagcatgtt cttagtctca gcagatatta ttgcatcaag aatggaaggc 240
 ggcgttggtc tagctttggt acgagaagggt gattctaagc cctacgcgat tagttatgga 300
 tactcatcag gcgttcctaa tttatgtagt ctaagaacca gaattattaa tacaggattg 360
 actccgacaa cgtattcatt acgtgtaggc ggttttagaaa gcggtgtggt atgggttaat 420
 gccctttcta atggcaatga tatttttagga ataacaaata cttctaattgt atcttttttg 480
 gaggtaatac ctcaaacaaa cgcttaaaca atttttattg gatttttctt atagggttta 540
 tatttagaga aaaaagtctg aattacgggg tttgttatgc aaaataaact cgtgccgaat 600
 tc 602

<210> 52
 <211> 145
 <212> DNA
 <213> Chlamydia

<400> 52
 gatccgaatt cggcacgagc tcgtgccgat gtgttcaaca gcatccatag gatgggcagt 60
 caaatatact ccaagtaatt ctttttctct tttcaacaac tccttaggag agcggttgat 120
 aacattttca gctcgtgccg aattc 145

<210> 53
 <211> 450
 <212> DNA
 <213> Chlamydia

<400> 53
 gatccgaatt cggcacgagg taatcggcac cgcactgctg acactcatct cctcgagctc 60
 gatcaaacc acacttgagg caagtaccta caacataacg gtccgctaaa aacttccctt 120
 cttcctcaga atacagctgt tcggtcacct gattctctac cagtcgcgt tcctgcaagt 180
 ttcgatagaa atcttgacac atagcaggat gataagcgtt cgtagtctct gaaaagaaat 240
 ctacagaaat tcccaatttc ttgaagggtat ctttatgaag cttatgatac atgtcgacat 300
 attcttgata ccccatgcct gccaaactctg cattaaagggt aattgcgatt ccgtattcat 360
 cagaaccaca aatatacaaaa acctctttgc cttgtagtct ctgaaaacgc gcataaacat 420
 ctgcaggcaa ataagcctcg tgccgaattc 450

<210> 54
 <211> 716
 <212> DNA
 <213> Chlamydia

<400> 54

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gatcgaattt cggcacgagc ggcacgagtt ttctgatagc gatttacaat cctttattca 60
acttttgcct agagaggcac actatactaa gaagtttctt ggggtgtgtg cacagtcctg 120
tcgtcagggg attctgctag aggggtaggg gaaaaaaccc ttattactat gaccatgogc 180
atgtggaatt acattccata gactttcgca tcattcccaa catttacaca gctctacacc 240
tcttaagaag aggtgacgtg gattgggtgg ggcagccttg gcaccaaggg attccttttg 300
agcttcggac tacctctgct ctctacaccc attaccctgt agatggcaca ttctggctta 360
ttcttaatcc caaagatcct gtactttcct ctctatctaa tcgtcagcga ttgattgctg 420
ccatccaaaa ggaaaaactg gtgaagcaag ctttaggaac acaatatcga gtagctgaaa 480
gctctccatc tccagaggga atcatagctc atcaagaagc ttctactcct tttcctggga 540
aaattacttt gatatatccc aataatatta cgcgctgtca gcgtttggcc gaggtatcca 600
aaaaatgata gacaaggagc acgctaaatt tgtacatacc ccaaaatcaa tcagccatct 660
aggcaaatgg aatatcaaag taaacagtat acaactgggg atctcgtgcc gaattc 716

```

<210> 55

<211> 463

<212> DNA

<213> Chlamydia trachomatis

<400> 55

```

tctcaaatcc ttgctttgaa taatccagat atttcaaaaa ccatgttcga taaattcacc 60
cgacaaggac tccgtttcgt actagaagcc tctgtatcaa atattgagga tataggagat 120
cgcgttcggt taactatcaa tgggaatgtc gaagaatacg attacgttct cgtatctata 180
ggacgocggt tgaatacaga aaatattggc ttggataaag ctggtgttat ttgtgatgaa 240
cgcggagtca tccctaccga tgccacaatg cgcacaaacg tacctaacat ttatgctatt 300
ggagatatca caggaaaatg gcaacttgcc catgtagctt ctcatcaagg aatcattgca 360
gcacggaata taggtggcca taaagaggaa atcgattact ctgctgtccc ttctgtgatc 420
tttaccttcc ctgaagtcgc ttcagtaggc ctctcccaa cag 463

```

<210> 56

<211> 829

<212> DNA

<213> Chlamydia trachomatis

<400> 56

```

gtactatggg atcattagtt ggaagacagg ctccggattt ttctggtaaa gccgttggtt 60
gtggagaaga gaaagaaatc tctctagcag actttcgtgg taagtatgta gtgctcttct 120
tttatcctaa agattttacc tatgtttgtc ctacagaatt acatgctttt caagatagat 180
tggtagattt tgaagagcat ggtgcagtcg tccttggttg ctccgttgac gacattgaga 240
cacattctcg ttggctcact gtagcgagag atgcaggagg gatagaggga acagaatatc 300
ctctgttagc agaccctct tttaaaatat cagaagcttt tgggtgtttg aatcctgaag 360
gatcgctcgc tttaagagct actttcctta tcgataaaca tgggggttatt cgtcatgcgg 420
ttatcaatga tcttctttta gggcgttcca ttgacgagga attgctgatt ttagattcat 480
tgatcttctt tgagaaccac ggaatgggtt gtccagctaa ctggcgcttct ggagagcgtg 540
gaatgggtgcc ttctgaagag ggattaaaag aatacttcca gacgatggat taagcatctt 600
tgaaagtaag aaagtgcgtac agatcttgat ctgaaaagag aagaaggctt ttttaattttc 660
tgcagagagc cagcgaggct tcaataatgt tgaagtctcc gacaccaggc aatgctaagg 720
cgacgatatt agttagttaa gtctgagtat taaggaaatg aaggccaaag aaatagctat 780
caataaagaa gccttcttcc ttgactctaa agaatagtat gtcgtatcc 829

```

<210> 57

<211> 1537

<212> DNA

<213> Chlamydia trachomatis

<400> 57

```

acatcaagaa atagcggact cgccttttagt gaaaaaagct gaggagcaga ttaatcaagc 60
acaacaagat attcaaacga tcacacctag tggtttggat attcctatcg ttggtccgag 120
tgggtcagct gcttccgcag gaagtgcggc aggagcgttg aaatcctcta acaattcagg 180
aagaatttcc ttgttgcttg atgatgtaga caatgaaatg gcagcgattg caatgcaagg 240
ttttcgatct atgatcgaac aatttaatgt aaacaatcct gcaacagcta aagagctaca 300
agctatggag gctcagctga ctgcatgtgc agatcaactg gttggtgcgg atggcgagct 360
cccagccgaa atacaagcaa tcaaagatgc tcttgcgcaa gctttgaaac aaccatcagc 420
agatggttta gctacagcta tgggacaagt ggcttttgca gctgccaagg ttggaggagg 480
ctccgcagga acagctggca ctgtccagat gaatgtaaaa cagctttaca agacagcgtt 540
ttcttcgact tcttccagct cttatgcagc agcactttcc gatggatatt ctgcttacia 600
aacactgaac tctttatatt ccgaaagcag aagcggcgtg cagtcagcta ttagtcaaac 660
tgcaaatccc gcgctttcca gaagcgtttc tcgttctggc atagaaagtc aaggacgcag 720
tgcatatgct agccaaagag cagcagaaac tattgtcaga gatagccaaa cgtaggtga 780
tgtatatagc cgcttacagg ttctggattc tttgatgtct acgattgtga gcaatccgca 840
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tgggtatcct gctgttcaga attctgtgga tagcttgcag aagtttgctg cacaattgga 960
aagagagttt gttgatggg aacgtagtct cgcagaatct caagagaatg cgtttagaaa 1020
acagcccgtt ttcattcaac aggtgttggg aaacattgct tctctattct ctggttatct 1080
ttcttaacgt gtgattgaag tttgtgaatt gagggggagc caaaaaagaa tttctttttt 1140
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ttagttccaa aagaagaaaa tatataaaag aaaaaactcc taattcattt aaaaagtgtc 1260
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tatccgagaa aaaaggtcca ggctcgtgcc gaattcggca cgagactacg aaagaaaggt 1380
cttttctttc ggaatctgtc attggatctg cgtaagactt aaagttcggc aacacaggct 1440
ctgtcttctc tttaggtttc ttgcgcgaga aaaattttct caagtaacaa gaagatttct 1500
ttttacagcc ggcatccggc ttctcgcgaa gtataac 1537

```

```

<210> 58
<211> 463
<212> DNA
<213> Chlamydia trachomatis

```

```

<400> 58
tctcaaatcc ttgctttgaa taatccagat atttcaaaaa ccatgttcga taaattcacc 60
cgacaaggac tccgtttcgt actagaagcc tctgtatcaa atattgagga tataggagat 120
cgcgttcggt taactatcaa tgggaatgtc gaagaatacg attacgttct cgtatctata 180
ggacgccggt tgaatacaga aaatattggc ttggataaag ctggtgttat ttgtgatgaa 240
cgcggagtc tccctaccga tgccacaatg cgcacaaacg tacctaacat ttatgctatt 300
ggagatatca caggaaaatg gcaacttgcc catgtagctt ctcatcaagg aatcattgca 360
gcacggaata taggtggcca taaagaggaa atcgattact ctgctgtccc ttctgtgatc 420
tttaccttcc ctgaagtgcg ttcagtaggc ctctcccaa cag 463

```

```

<210> 59
<211> 552
<212> DNA
<213> Chlamydia trachomatis

```

```

<400> 59
acattcctcc tgctcctcgc ggccatccac aaattgaggt aaccttcgat attgatgcc 60
acggaatttt acacgtttct gctaaagatg ctgctagtgg acgcgaacaa aaaatccgta 120
ttgaagcaag ctctggatta aaagaagatg aaattcaaca aatgatccgc gatgcagagc 180
ttcataaaga ggaagacaaa caacgaaaag aagcttctga tgtgaaaaat gaagccgatg 240
gaatgatctt tagagccgaa aaagctgtga aagattacca cgacaaaatt cctgcagaac 300
ttgttaaaga aattgaagag catattgaga aagtagccca agcaatcaaa gaagatgctt 360
ccacaacagc tatcaaagca gcttctgatg agttgagtag tcgtatgcaa aaaatcggag 420
aagctatgca ggctcaatcc gcatccgcag cagcatcttc tgcagcgaat gctcaaggag 480
ggccaaacat taactccgaa gatctgaaaa aacatagttt cagcacacga cctccagcag 540

```

gaggaagcgc ct

552

<210> 60
 <211> 1180
 <212> DNA
 <213> Chlamydia trachomatis

<400> 60

```

atcctagcgg taaaactgct tactggctcag ataaaatcca tacagaagca acacgtactt 60
cttttaggag aaaaaatcta taatgctaga aaaatcctga gtaaggatca cttctcctca 120
acaacttttt catcttgat agagttagtt tttagaacta agtcttctgc ttacaatgct 180
cttgcatatt acgagctttt tataaacctc cccaaccaa ctctacaaa agagtttcaa 240
tcgatccct ataaatccgc atatatatttg gccgctagaa aaggcgattt aaaaaccaag 300
gtcgtatgta tagggaaagt atgtggaatc tcgtgccgaa ttcggcacga gcggcacgag 360
gatgtagagt aattagttaa agagctgcat aattatgaca aagcatggaa aacgcattcg 420
tggatccaa gagacttacg atttagctaa gtcgtattct ttgggtgaag cगतगगगग 480
tttaaaacag tgtcctactg tgcgtttcga tcaaacggtt gatgtgtctg tttaaattag 540
gatcgatcca agaaagagt atcagcaaat tcgtgggttcg gtttctttac ctacacggtag 600
aggtaaagt ttgcgaattt tagtttttgc tgctggagat aaggctgcag aggtattga 660
agcaggagcg gactttgttg gtagcgacga cttggtagaa aaaatcaaag gtggatgggt 720
tgacttcgat gttgcggttg ccactcccg tatgatgaga gaggtcggaa agctaggaaa 780
agtttttaggt ccaagaaacc ttatgcctac gcctaaagcc ggaactgtaa caacagatgt 840
ggttaaaact attgcggaac tgcgaaaagg taaaattgaa tttaaagctg atcgagctgg 900
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tgaagcgttg tgtgcagcct tagttaaagc taagcccgca actgctaaag gacaatattt 1020
agttaatttc actatttcct cgaccatggg gccagggggt accgtggata ctaggaggtt 1080
gattgcgtta taattctaag tttaaagagg aaaaatgaaa gaagagaaaa agttgctgct 1140
tcgcgaggtt gaagaaaaga taaccgcttc tcggcacgag 1180

```

<210> 61
 <211> 1215
 <212> DNA
 <213> Chlamydia trachomatis

<400> 61

```

attacagcgt gtgcaggtaa cgacatcatt gcatgatgct tttgatggca ttgatgcggc 60
attccttata gggtcagttc ctagaggccc aggaatggag agaagagatc ttctaaagaa 120
aaatggggag attgttgcta cgcaaggaaa agctttgaac acaacagcca agcgggatgc 180
aaagattttt gttgttgga accctgtgaa taccaattgc tggatagcaa tgaatcatgc 240
tcccagatta ttgagaaaga actttcatgc gatgctacga ttggaccaga atcgtagca 300
tagcatgtta tcgcatagag cagaagtacc tttatcggct gtatcacaag ttgtgggttg 360
gggaaatcac tccgccaaac aagtgcctga ttttacgcaa gctctgatta atgaccgtcc 420
tatcgagag acgatagcgg atcgtagatt gttagagaat attatggtgc cttctgtaca 480
gagtcgtggt agtgcagtaa ttgaagcacg agggaggtct tcggcagctt ctgcagcacg 540
agcttttagca gaggtgctc gatcaatata tcagccaaaa gaaggactcg tgccgaattc 600
ggcacgagta tcgaaattgc aggcatttct agtgaatggc cgtatgctta taaactacgt 660
ggtacagact tgagctctca aaagtttgc acagattctt acatcgagca ccttattct 720
aagaatatct actccctca actatttgga tcccctaaac aagaaaagga ttacgcattt 780
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gaaaattact tcatttatga aatgcattgt cgtcattca cccgagatcc gtcttccag 900
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aaaaatcagg acttccccca cctgtgtaac tattgggggt attcttcggt gaattttttc 1080
tgccctctc gccgttatac ttatggggca gacccttgcg ctccggccc agagttcaag 1140
actcttgta aagcgttaca ccgtgcggga atcgaagtca ttctcgatgt cgttttcaat 1200
catacaggtt ttgaa 1215

```

<210> 62
 <211> 688
 <212> DNA
 <213> Chlamydia trachomatis

<400> 62
 gtggatccaa aaaagaatct aaaaagccat acaaagattg cgttacttct tgcgatgcct 60
 ctaacacttt atcagcgta tctttgagaa gcatctcaat gagcgctttt tcttctctag 120
 catgccgcac atccgcttct tcatgttctg tgaaatatgc atagtcttca ggattggaaa 180
 atccaaagta ctcatgcaat ccacgaattt tctctctagc gatacgtgga atttgactct 240
 cataagaata caaagcagcc actcctgcag cttaaagaatc tctgtacac caccgcatga 300
 aagtagctac tttcgctttt gctgcttcac taggctcatg agcctctaac tcttctggag 360
 taactcctag agcaaacaca aactgcttcc acaaatcaat atgattaggg taaccgttct 420
 cttcatccat caagttatct aacaataact tacgcgcctc taaatcatcg caacgactat 480
 gaatcgcaga taaatattta ggaaaggctt tgatatgtaa ataatagtct ttggcacgag 540
 cctgtaattg ctctttagta agctccctct tcgaccattt cacataaaac gtgtgttcta 600
 gcatatgctt attttgaata attaaatcta actgatctaa aaaattcata aacacctcca 660
 tcatttcttt tcttgactcc acgtaacc 688

<210> 63
 <211> 269
 <212> DNA
 <213> Chlamydia trachomatis

<400> 63
 atgttgaaat cacacaagct gttcctaaat atgctacggt aggatctccc tctcctgttg 60
 aaattactgc tacaggtaaa agggattgtg ttgatgttat cattactcag caattaccat 120
 gtgaagcaga gttcgtacgc agtgatccag cgacaactcc tactgctgat ggtaagctag 180
 tttggaaaat tgaccgctta ggacaaggcg aaaagagtaa aattactgta tgggtaaaaac 240
 ctcttaaaga aggttgctgc tttacagct 269

<210> 64
 <211> 1339
 <212> DNA
 <213> Chlamydia trachomatis

<400> 64
 cttttattat ggcttctggg gatgatgtca acgatatcga cctgctatct cgaggagatt 60
 ttaaaattgt tatacagacg gctccagagg agatgcatgg attagcggac tttttggctc 120
 ccccgcgaa ggatcttggt attctctccg cctgggaagc tggtagctg cgttacaaac 180
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 tgcgcctact tgctcagctt ccattggaga aggtagtggg gccagctctt ggtagtaatc 360
 caccattctc tcaataaatc caatagcttt tctgcacgg ctagctaata gccctgccga 420
 gatagtattc actcggactc cccaacgtcg gccggcttcc caagccagta cttttgtatc 480
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 ggaagcaaga taagttagag agatggtgct agctcctgca ttcataattg ggccaaaatg 600
 agagagaagg ctgataaagg agtagctgga tgtacttaag gcggcaagat agcctttacg 660
 agaggtatca agtaatggt tagcaatttc cggactgttt gctaaaagat gaacaagaat 720
 atcaatgtgt ccaaaatctt tttcacctg ttctacaact tcggatacag tgtaccaga 780
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 actggcatcc atgggataga ttttagcgaa agttagcaat tctccattgg agagtccacg 900
 agatgcattg aattttccta actccaaga ttgagagaaa attttataga taggaacca 960
 ggtccccaca agtatggttg cgctgcttc tgctaacatt ttggcaatgc cccagccata 1020
 cccgttatca tcgcctatgc cggctatgaa agcaattttt cctgttaaat caattttcaa 1080
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ccattcacta gaaactccat aacagcgggt ttctctgatg gcgagtaaga agcaagcatt 120
 tgatgtaaat tagcgcaatt agagggggat gaggttactt ggaaatataa ggagcgaagc 180
 gatgaaggag atgtatttgc tctggaagca aaggtttctg aagctaacag aacattgcgt 240
 cctccaacaa tcgcctgagg attctggctc atcagttgat gctttgcctg aatgagagcg 300
 gacttaagtt tcccatcaga gggagctatt tgaattagat aatcaagagc tagatccttt 360
 attgtgggat cagaaaattt acttgtgagc gcacgcagaa tttcgtcaga agaagaatca 420
 tcatcgaacg aatttttcaa tcttcgaaaa tcttctccag agacttcgga aagatcttct 480
 gtgaaacgat cttcaagagg agtatcgctt ttttctctg 520

<210> 67

<211> 276

<212> DNA

<213> Chlamydia

<400> 67

gatccgaatt cggcaccgagg tattgaagga gaaggatctg actcgatcta tgaaatcatg 60
 atgcctatct atgaagttat gaatatggat ctagaacac gaagatcttt tgcggtacag 120
 caaggcact atcaggaccc aagagcttca gattatgacc tcccacgtgc tagcgactat 180
 gatttgctta gaagcccata tctactcca cctttgcctt ctagatatca gctacagaat 240
 atggatgtag aagcagggtt ccgtgaggca gtttat 276

<210> 68

<211> 248

<212> DNA

<213> Chlamydia

<400> 68

gatccgaatt cggcaccgagg tgttcaagaa tatgtccttc aagaatgggt taaattgaaa 60
 gatctaccgg tagaagagtt gctagaaaaa cgatatcaga aattccgaac gataggtcta 120
 tatgaaactt cttctgaaag cgattctgag gcataagaag catttagttt tattcggttt 180
 ttctctttta tccatattag ggctaacgat aacgtctcaa gcagaaattt tttctctag 240
 tcttattg 248

<210> 69

<211> 715

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (34)

<223> n=A,T,C or G

<400> 69

gatccgaatt cggcaccgaga aggtagatcc gatntcagca aaagtgcctc taaaggaaga 60
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 attttcatat agttttcgac ggaactcttt attaaactcc caaaaccgaa tgtagtcgt 180
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 tggtagagcc ggtatagcgc tctagcatgt cacaggcgat tgtttcttcg ctgatttttt 660
 tatgttgatg ggtcataaat cacagatatt ataattggtta gagaatcttt ttttc 715

<400> 70

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<210> 71
<211> 715
<212> DNA
<213> Chlamydia
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<400> 71

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<210> 72
<211> 641
<212> DNA
<213> Chlamydia
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<220>

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<221> unsure
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<223> n=A,T,C or G
<221> unsure
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<223> n=A,T,C or G
<221> unsure
<222> (575)
<223> n=A,T,C or G
<221> unsure
<222> (583)
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<222> (634)
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<400> 72

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attccactat ttcaagtcgc tccagttgta gagagaagga tcttttcttc tggatgttcc 540
gaaaccttgn tctcttcgnc tctctcctgt agcanacaaa tgnctctctc gacatctctt 600
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<210> 73

<211> 584

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (460)

<223> n=A,T,C or G

<221> unsure

<222> (523)

<223> n=A,T,C or G

<221> unsure

<222> (541)

<223> n=A,T,C or G

<221> unsure

<222> (546)

<223> n=A,T,C or G

<400> 73

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gacttattac ggaacgagta aggcggagat ttctagagtt ctgcaaaagg gtaagcactg 180
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aagtattttt atagctgaag aacataggat gagtcatggn tagaaaagat cgtttaacta 480
atgaaagact gaataagcta tttgatagcc cctttagttt ggntaattac gtaattaagc 540
nagctnagaa caaaattgct agaggagatg ttcgttcttc taac 584

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<210> 74

<211> 465

<212> DNA

<213> Chlamydia

<400> 74

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caatgcggcg tggagtactg ggtatcgggc tgtgttggtg tggattttct ccattacaca 180
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tagcgggtgat agagcaggca cctaatatgg tctaccattc atatcctact tctcgagaag 360
agtattgttc tttgcgcata gatgaaacag aggacttata cggacctttt ttgcaagcgg 420

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ttaccgtgga gtcaagaaaa gaaatgatgg aggtgtttat gaatt

465

<210> 75

<211> 545

<212> DNA

<213> Chlamydia

<400> 75

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ctaacaataa	cttacgcgcc	tctaaatcat	cgcaacgact	atgaatcgca	gataaatatt	480
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<210> 76

<211> 797

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (788)

<223> n=A,T,C or G

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<223> n=A,T,C or G

<400> 76

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aaaaggagaa	cttccagatt	tacatgctct	aggtatgtat	cacctgtaaa	ttatgccgtc	660
attatcccaa	tcccgcagta	tcatccagca	atcttccatt	cgaaagattt	ggaatcagat	720
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aaagttgnng	gggaata					797

<210> 77

<211> 399

<212> DNA

<213> Chlamydia

<400> 77

catatgcac	accatcacca	tcacatgcc	cgcatcattg	gaattgatat	tcctgcaaag	60
aaaaagttaa	aaataagtct	gacatatatt	tatggaatag	gatcagctcg	ttctgatgaa	120
atcattaaaa	agttgaagtt	agatcctgag	gcaagagcct	ctgaattaac	tgaagaagaa	180

gtaggacgac tgaactctct gctacaatca gaatataccg tagaagggga tttgcgacgt 240
 cgtgttcaat cggatatcaa aagattgac gccatccatt cttatcgagg tcagagacat 300
 agactttctt taccagtaag aggacaacgt acaaaaacta attctcgtag tcgaaaaggt 360
 aaaagaaaaa cagtcgcagg taagaagaaa taagaattc 399

<210> 78

<211> 285

<212> DNA

<213> Chlamydia

<400> 78

atgcatcacc atcaccatca catgagtcaa aaaaataaaa actctgcttt tatgcatccc 60
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 attgtaaaga aagtttggga atacattaaa aaacacaact gtcaggatca aaaaaataaa 180
 cgtaatatcc ttcccgatgc gaatcttgcc aaagtctttg gctctagtga tcctatcgac 240
 atgttccaaa tgaccaaagc cctttccaaa catattgtaa aataa 285

<210> 79

<211> 950

<212> DNA

<213> Chlamydia

<400> 79

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 tgcgttataa ttctaagttt aaagaggaaa aatgaaagaa gagaaaaagt tgctgcttcg 900
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<210> 80

<211> 395

<212> DNA

<213> Chlamydia

<400> 80

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 ataagcccat tgtctataag agtcaaattt ccagagcgct gagatcgttc cattttgtag 360
 ttgatcagga tccagagtga gtgttcctgt atatc 395

<210> 81

<211> 2085

<212> DNA

<213> Chlamydia

<400> 81

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 aaaagcgaaa gtagctactt tcatgcgggtg gtgtacagga gattcttttag ctgcaggagt 2040
 ggctgctttg tattcttatg agagtcaaat tccacgtatc gcctc 2085

<210> 82

<211> 405

<212> DNA

<213> Chlamydia

<400> 82

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 attggctcca taaagggagg agaaaacttc gatataggga atcgtatcaa ggtgaaagta 360
 gcaaaaaata aattagctcc tccattccga actgcagaat ttgat 405

<210> 83

<211> 379

<212> DNA

<213> Chlamydia

<400> 83

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<210> 84

<211> 715

<212> DNA

<213> Chlamydia

<400> 84

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caaagacgca	gttttgagtg	ttatacaaat	aaaaaccaga	atttcccatt	ttaaaactct	660
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<210> 85

<211> 476

<212> DNA

<213> Chlamydia

<400> 85

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<210> 86

<211> 1551

<212> DNA

<213> Chlamydia

<400> 86

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cacgcttgct	gttcttttag	gtttagtctc	tagcgtttta	gataatgtgc	cattagtcgc	180
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gggaatggaa	aaagtgaagt	tcggctggta	tgtcaaacac	gcttcttggg	ttgcttttagc	360
cagttatttt	ggaggtctag	cagtctatct	tctaattggaa	aattgtgtga	atttgttcgt	420

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<210> 87
<211> 3031
<212> DNA
<213> Chlamydia

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<400> 87

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agaaagatgc agatactctt cccgggaagg tagagcaaag tactttgttc tcagtaacca 180
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<211> 474
<212> PRT
<213> Chlamydia
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65					70					75					80
His	Val	Glu	Gly	Phe	Ser	Ile	Asn	Tyr	Pro	Ala	Met	Val	Gln	Arg	Lys
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Asp	Ser	Val	Val	Arg	Ser	Ile	Arg	Asp	Gly	Leu	Asn	Gly	Leu	Ile	Arg
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 Ile Ser Lys Thr Met Phe Asp Lys Phe Thr Arg Gln Gly Leu Arg Phe
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 245 250 255
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35 40 45
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50 55 60
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65 70 75 80
Val Gln Ser Asp Ile Lys Arg Leu Ile Ala Ile His Ser Tyr Arg Gly
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<213> Chlamydia

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35 40 45
Lys Asp Phe Thr Tyr Val Cys Pro Thr Glu Leu His Ala Phe Gln Asp
50 55 60
Arg Leu Val Asp Phe Glu Glu His Gly Ala Val Val Leu Gly Cys Ser
65 70 75 80
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Ala Gly Gly Ile Glu Gly Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser
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0904133-043301

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<210> 105

<211> 21

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<210> 106

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TOC240" 2224950

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<211> 1461

<212> DNA

<213> Chlamydia

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 <212> DNA
 <213> Chlamydia

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 <212> DNA
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<210> 118

<211> 951

<212> DNA

<213> Chlamydia

<400> 118

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<212> DNA

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<400> 119

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catcaacacc tgtcgcagcc aaaatgacag cttctgatgg aatatcttta acagtctcca 120
ataatccatc aaccaatgct tctattacaa ttgggtttgga tgcggaaaaa gcttaccagc 180
ttattctaga aaagttggga gatcaaattc ttggtggaat tgctgatact attgttgata 240
gtacagtcca agatatttta gacaaaatca caacagaccc ttctctaggt ttgttgaaag 300
cttttaacaa ctttccaatc actaataaaa ttcaatgcaa cgggttattc actcccagga 360
acattgaaac tttattagga ggaactgaaa taggaaaatt cacagtcaca cccaaaagct 420

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ctgggagcat gttcttagtc tcagcagata ttattgcata aagaatggaa ggcggcggtg 480
ttctagcttt ggtacgagaa ggtgattcta agccctacgc gattagttat ggatactcat 540
caggcggtcc taatttatgt agtctaagaa ccagaattat taatacagga ttgactccga 600
caacgtattc attacgtgta ggcgggttag aaagcgggtg ggtatgggtt aatgcccttt 660
ctaattggcaa tgatatttta ggaataacaa atacttctaa tgtatctttt ttggaggtaa 720
tacctcaaac aaacgcttaa acaattttta ttggattttt cttataggtt ttatatttag 780
agaaaaaagt tcgaattacg gggtttgta tgcaaaataa aagcaaagtg agggacgatt 840
ttattaaaat tgttaaagat tcttggtatc ggtctgcgat tccgactcgt ccaacatcaa 900
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<210> 120
<211> 897
<212> DNA
<213> Chlamydia

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<220>
<221> misc_feature
<222> (1)...(897)
<223> n = A, C, T or G

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<400> 120
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gttaagggtcg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
actgttctcg ctttagggaa tgcccttaac ggagcgttgc caggaacagt tcaaagtgcg 300
caaagcttct tctcttacat gaaagctgct agtcagaaac cgcaagaagg ggatgagggg 360
ctcgtagcag atctttgtgt gtctcataag cgcanagcgg ctgcggtgtgt ctgtagcttc 420
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aaaatgctgg cgcaaccgtt tctttcttcc caaattaaag caaatatggg atcttctgtt 540
agctatatta tggcgggctaa ccattgcagc tttgtggtgg gttctggact cgctatcagt 600
gcggaaagag cagattgcga agcccgctgc gctcgtattg cgagagaaga gtcgtcactc 660
gaattgtcgg gagaggaaaa tgcttgcgag aggagagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
gacgttttca aattgggtgcc gttgcctatt acaatgggta ttcgtgcaat tgtggctgcg 840
ggatgtacgt tcacttctgc agttattgga ttgtggactt tctgcgccag agcataa 897

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<210> 121
<211> 298
<212> PRT
<213> Chlamydia

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<400> 121
Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
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Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
20 25 30
Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
35 40 45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
50 55 60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
65 70 75 80
Thr Val Leu Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
85 90 95

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Val Gln Ser Ala Gln Ser Phe Phe Ser Tyr Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Pro Gln Glu Gly Asp Glu Gly Leu Val Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Ile Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Phe Val
 180 185 190
 Val Gly Ser Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Ser Leu Glu Leu Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Arg Arg Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Val
 275 280 285
 Ile Gly Leu Trp Thr Phe Cys Ala Arg Ala
 290 295

<210> 122
 <211> 897
 <212> DNA
 <213> Chlamydia

<400> 122
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 gttaagggtcg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatacgaga 240
 actgttgctg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
 ctacacagcag atcttttgtgt gtctcataag cgcagagcgg ctgcggtgt ctgtggcttc 420
 atcggaggaa ttacctacct cgcgacattc ggagttatcc gtccgattct gtttgtcaac 480
 aaaatgctgg tgaaccggtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
 agctatatta tggcggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
 gcggaaagag cagattgcga agcccgctgc gctcgtattg cgagagaaga gtcgttactc 660
 gaagtgtcgg gagaggaaaa tgcttgcgag aagagagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780
 gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
 ggatgtacgt tcaattctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 123
 <211> 298
 <212> PRT
 <213> Chlamydia

<400> 123
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
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Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg
 65 70 75 80
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Gly Phe Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Val Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Val Asn Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
 180 185 190
 Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Lys Arg Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
 275 280 285
 Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
 290 295

<210> 124

<211> 897

<212> DNA

<213> Chlamydia

<400> 124

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attaaggttg	ccaagtctgc	tgccgaattg	accgcaaata	ttttggaaca	agctggaggc	180
gcggtctctt	ccgcacacat	tacagcttcc	caagtgtcca	aaggattagg	ggatgcgaga	240
actgttgctg	cttttagggaa	tgcctttaac	ggagcgttgc	caggaacagt	tcaaagtgcg	300
caaagcttct	tctctcacat	gaaagctgct	agtcagaaaa	cgcaagaagg	ggatgagggg	360
ctcacagcag	atcttttgtg	gtctcataag	cgcagagcgg	ctgcggctgt	ctgtagcatc	420
atcggaggaa	ttacctacct	cgcgacattc	ggagctatcc	gtccgattct	gtttgtcaac	480
aaaatgctgg	caaaaccggt	tctttcttcc	caaactaaag	caaatatggg	atcttctggt	540
agctatatta	tggcggctaa	ccatgcagcg	tctgtgggtg	gtgctggact	cgctatcagt	600
gcggaagag	cagattgcga	agcccgtgc	gctcgtattg	cgagagaaga	gtcgttactc	660
gaagtgcg	gagaggaaaa	tgcttgcgag	aagaaagtcg	ctggagagaa	agccaagacg	720
ttcacgcgca	tcaagtatgc	actcctcact	atgctcgaga	agtttttgga	atgcgttgcc	780
gacgttttca	aattgggtgcc	gctgcctatt	acaatgggta	ttcgtgcgat	tgtggctgct	840

ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa

897

<210> 125

<211> 298

<212> PRT

<213> Chlamydia

<400> 125

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Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
20 25 30
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
35 40 45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
50 55 60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
65 70 75 80
Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
85 90 95
Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
100 105 110
Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
115 120 125
His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
130 135 140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
145 150 155 160
Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
165 170 175
Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
180 185 190
Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
195 200 205
Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly
210 215 220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
225 230 235 240
Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
245 250 255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
260 265 270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
275 280 285
Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
290 295

<210> 126

<211> 897

<212> DNA

<213> Chlamydia

<400> 126

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acacagccca acaataaaat ggcaagggtg gtaaataaga cgaagggaat ggataagact 120
attaagggtg ccaagtctgc tgccgaattg accgcaaata ttttgaaca agctggaggc 180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggtatgcgaga 240


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<210> 127
<211> 298
<212> PRT
<213> Chlamydia
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	<400> 127														
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Lys	Ala	Phe	Phe 20	Thr	Gln	Pro	Asn	Asn 25	Lys	Met	Ala	Arg	Val 30	Val	Asn
Lys	Thr	Lys 35	Gly	Met	Asp	Lys	Thr 40	Ile	Lys	Val	Ala	Lys 45	Ser	Ala	Ala
Glu	Leu 50	Thr	Ala	Asn	Ile	Leu 55	Glu	Gln	Ala	Gly	Gly 60	Ala	Gly	Ser	Ser
Ala 65	His	Ile	Thr	Ala	Ser 70	Gln	Val	Ser	Lys	Gly 75	Leu	Gly	Asp	Ala	Arg 80
Thr	Val	Val	Ala	Leu 85	Gly	Asn	Ala	Phe	Asn 90	Gly	Ala	Leu	Pro	Gly 95	Thr
Val	Gln	Ser	Ala 100	Gln	Ser	Phe	Phe	Ser	His 105	Met	Lys	Ala	Ala	Ser	Gln
Lys	Thr	Gln 115	Glu	Gly	Asp	Glu	Gly 120	Leu	Thr	Ala	Asp	Leu	Cys	Val	Ser
His	Lys 130	Arg	Arg	Ala	Ala	Ala 135	Ala	Val	Cys	Ser	Ile	Ile	Gly	Gly	Ile
Thr 145	Tyr	Leu	Ala	Thr	Phe 150	Gly	Ala	Ile	Arg	Pro 155	Ile	Leu	Phe	Val	Asn
Lys	Met	Leu	Ala	Lys 165	Pro	Phe	Leu	Ser	Ser	Gln 170	Thr	Lys	Ala	Asn	Met
Gly	Ser	Ser	Val 180	Ser	Tyr	Ile	Met	Ala 185	Ala	Asn	His	Ala	Ala	Ser	Val
Val	Gly	Ala 195	Gly	Leu	Ala	Ile	Ser	Ala 200	Glu	Arg	Ala	Asp	Cys	Glu	Ala
Arg	Cys 210	Ala	Arg	Ile	Ala	Arg 215	Glu	Glu	Ser	Leu	Leu	Glu	Val	Pro	Gly
Glu 225	Glu	Asn	Ala	Cys	Glu 230	Lys	Lys	Val	Ala	Gly 235	Glu	Lys	Ala	Lys	Thr
Phe	Thr	Arg	Ile	Lys 245	Tyr	Ala	Leu	Leu	Thr	Met 250	Leu	Glu	Lys	Phe	Leu
Glu	Cys	Val	Ala 260	Asp	Val	Phe	Lys	Leu 265	Val	Pro	Leu	Pro	Ile	Thr	Met
Gly	Ile	Arg 275	Ala	Ile	Val	Ala	Ala 280	Gly	Cys	Thr	Phe	Thr	Ser	Ala	Ile
Ile	Gly 290	Leu	Cys	Thr	Phe	Cys 295	Ala	Arg	Ala						

<400> 128

<210> 129
<211> 298
<212> PRT
<213> Chlamydia

<400> 129

Met 1	Ala	Ser	Ile	Cys 5	Gly	Arg	Leu	Gly	Ser 10	Gly	Thr	Gly	Asn 15	Ala	Leu
Lys	Ala	Phe	Phe 20	Thr	Gln	Pro	Ser	Asn 25	Lys	Met	Ala	Arg	Val 30	Val	Asn
Lys	Thr	Lys 35	Gly	Met	Asp	Lys	Thr 40	Val	Lys	Val	Ala	Lys 45	Ser	Ala	Ala
Glu 50	Leu	Thr	Ala	Asn	Ile	Leu 55	Glu	Gln	Ala	Gly	Gly 60	Ala	Gly	Ser	Ser
Ala 65	His	Ile	Thr	Ala	Ser	Gln 70	Val	Ser	Lys	Gly 75	Leu	Gly	Asp	Thr	Arg
Thr	Val	Val	Ala	Leu 85	Gly	Asn	Ala	Phe	Asn 90	Gly	Ala	Leu	Pro 95	Gly	Thr
Val	Gln	Ser	Ala 100	Gln	Ser	Phe	Phe	Ser 105	His	Met	Lys	Ala	Ala 110	Ser	Gln
Lys	Thr	Gln 115	Glu	Gly	Asp	Glu	Gly 120	Leu	Thr	Ala	Asp	Leu 125	Cys	Val	Ser
His 130	Lys	Arg	Arg	Ala	Ala	Ala 135	Ala	Val	Cys	Gly	Phe 140	Ile	Gly	Gly	Ile
Thr 145	Tyr	Leu	Ala	Thr	Phe 150	Gly	Val	Ile	Arg	Pro 155	Ile	Leu	Phe	Val	Asn
Lys	Met	Leu	Val	Asn 165	Pro	Phe	Leu	Ser	Ser 170	Gln	Thr	Lys	Ala	Asn 175	Met
Gly	Ser	Ser	Val 180	Ser	Tyr	Ile	Met	Ala 185	Ala	Asn	His	Ala	Ala 190	Ser	Val
Val	Gly	Ala 195	Gly	Leu	Ala	Ile	Ser 200	Ala	Glu	Arg	Ala	Asp 205	Cys	Glu	Ala
Arg	Cys 210	Ala	Arg	Ile	Ala	Arg 215	Glu	Glu	Ser	Leu	Leu 220	Glu	Val	Ser	Gly
Glu	Glu	Asn	Ala	Cys	Glu	Lys	Arg	Val	Ala	Gly	Glu	Lys	Ala	Lys	Thr

225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
 275 280 285
 Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
 290 295

<210> 130
 <211> 897
 <212> DNA
 <213> Chlamydia

<400> 130
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 acacagccca gcaataaaat ggcaagggtg gtaaataaga cgaagggaat ggataagact 120
 gttaaggtcg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttctcg ctttagggaa tgcccttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctcttacat gaaagctgct agtcagaaac cgcaagaagg ggatgagggg 360
 ctgtagcag atcttttgtgt gtctcataag cgcagagcgg ctgcggtgt ctgtagcttc 420
 atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
 aaaatgctgg cgcaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
 agctatatta tggcggctaa ccatgcagcg tttgtggtgg gttctggact cgctatcagt 600
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 gaattgtcgg gagaggaaaa tgcttgcgag aggggagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
 gacgttttca aattggtgcc gttgcctatt acaatgggta ttcgtgcaat tgtggctgcg 840
 ggatgtacgt tcacttctgc agttattgga ttgtggactt tctgcaacag agtataa 897

<210> 131
 <211> 298
 <212> PRT
 <213> Chlamydia

<400> 131
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 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
 65 70 75 80
 Thr Val Leu Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser Tyr Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Pro Gln Glu Gly Asp Glu Gly Leu Val Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn

145 150 155 160
 Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Phe Val
 180 185 190
 Val Gly Ser Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Ser Leu Glu Leu Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Arg Gly Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Val
 275 280 285
 Ile Gly Leu Trp Thr Phe Cys Asn Arg Val
 290 295

<210> 132
 <211> 897
 <212> DNA
 <213> Chlamydia

<400> 132
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 gttaagggtcg ccaagtctgc tgccgaattg accgcaaata ttttgaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttctcg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctcttacct gaaagctgct agtcagaaac cgcaagaagg ggatgagggg 360
 ctgtagcag atctttgtgt gtctcataag cgcagagcgg ctgcggtgt ctgtagcttc 420
 atcgaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
 aaaatgctgg cgcaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
 agctatatta tggcggctaa ccatgcagcg tttgtggtgg gttctggact cgctatcagt 600
 gcggaagag cagattgcga agcccgctgc gtcgtattg cgagagaaga gtcgtcactc 660
 gaattgtcgg gagaggaaaa tgcttgtgag aggagagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
 gacgttttca aattggtgcc gttgcctatt acaatgggta ttcgtgcaat tgtggctgcg 840
 ggatgtacgt tcacttctgc agttattgga ttgtggactt tctgcaacag agtataa 897

<210> 133
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 <212> PRT
 <213> Chlamydia

<400> 133
 Met Ala Ala Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg

65 70 75 80
 Thr Val Leu Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser Tyr Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Pro Gln Glu Gly Asp Glu Gly Leu Val Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Phe Val
 180 185 190
 Val Gly Ser Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Ser Leu Glu Leu Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Arg Arg Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Val
 275 280 285
 Ile Gly Leu Trp Thr Phe Cys Asn Arg Val
 290 295

<210> 134
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 <213> Chlamydia

<400> 134

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 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
 65 70 75 80
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
 180 185 190
 Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Met Pro Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
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<211> 882

<212> DNA

<213> Chlamydia

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 35 40 45
 Glu Leu Thr Ala Ser Ile Leu Glu Gln Thr Gly Gly Ala Gly Thr Asp
 50 55 60
 Ala His Val Thr Ala Ala Lys Val Ser Lys Ala Leu Gly Asp Ala Arg
 65 70 75 80
 Thr Val Met Ala Leu Gly Asn Val Phe Asn Gly Ser Val Pro Ala Thr
 85 90 95
 Ile Gln Ser Ala Arg Ser Cys Leu Ala His Leu Arg Ala Ala Gly Lys
 100 105 110
 Glu Glu Glu Thr Cys Ser Lys Val Lys Asp Leu Cys Val Ser His Arg
 115 120 125
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 130 135 140
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 145 150 155 160
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 165 170 175
 Ser Val Gly Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val Leu Gly
 180 185 190
 Ser Ala Leu Ser Ile Ser Ala Glu Arg Ala Asp Cys Glu Glu Arg Cys
 195 200 205
 Asp Arg Ile Arg Cys Ser Glu Asp Gly Glu Ile Cys Glu Gly Asn Lys
 210 215 220
 Leu Thr Ala Ile Ser Glu Lys Ala Arg Ser Trp Thr Leu Ile Lys
 225 230 235 240
 Tyr Arg Phe Leu Thr Met Ile Glu Lys Leu Phe Glu Met Val Ala Asp
 245 250 255
 Ile Phe Lys Leu Ile Pro Leu Pro Ile Ser His Gly Ile Arg Ala Ile
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<210> 142
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 <213> Artificial Sequence

<220>
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0984133-042301

<220>
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<213> Artificial Sequence

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<213> Artificial Sequence

<223> Made in a lab

Cys Ser Ile Ile Gly Gly Ile Thr Tyr Leu
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<213> Artificial Sequence

<223> Made in a lab

Cys Gly Phe Ile Gly Gly Ile Thr Tyr Leu
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<223> Made in a lab

Gly Phe Ile Gly Gly Ile Thr Tyr Leu
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<211> 24

<212> DNA
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 <210> 161
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 <213> Chlamydia

 <400> 161
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 <210> 162
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 <212> DNA
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 <400> 162
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 <210> 163
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 <400> 163
 ttttgaagca ggtaggtgaa tatg 24

 <210> 164
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 <400> 164
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 <210> 165
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 <400> 165
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 <210> 166
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 <400> 166
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<223> Made in a lab

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<213> Artificial Sequence

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Ser Ile Ile Gly Gly Ile Thr Tyr Leu
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<213> Chlamydia

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<211> 2949

<212> DNA

<213> Chlamydia

<400> 170

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<211> 2895

<212> DNA

<213> Chlamydia

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cctttcctaa	tacaaggagt	cgtgtcctat	ggacatatta	aacatgatac	aacaacactt	4740
tacccttcta	tccatgaaag	aaataaagga	gattgggaag	atthaggatg	gttagcggat	4800
cttcgtatct	ctatggatct	taaagaacct	tctaaagatt	cttctaaccg	gatcactgtc	4860
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<210> 175
<211> 880
<212> PRT
<213> Chlamydia
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<220>  
<221> VARIANT  
<222> (1)...(880)  
<223> Xaa = Any Amino Acid
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Ile	Leu	Ser	Ser 20	Thr	Ala	Val	Leu	Phe 25	Gly	Gln	Asp	Pro	Leu 30	Gly	Glu
Thr	Ala	Leu 35	Leu	Thr	Lys	Asn 40	Pro	Asn	His	Val	Val 45	Cys	Thr	Phe	Phe
Glu	Asp 50	Cys	Thr	Met	Glu	Ser 55	Leu	Phe	Pro	Ala	Leu 60	Cys	Ala	His	Ala
Ser 65	Gln	Asp	Asp	Pro	Leu 70	Tyr	Val	Leu	Gly	Asn 75	Ser	Tyr	Cys	Trp	Phe 80
Val	Ser	Lys	Leu	His 85	Ile	Thr	Asp	Pro	Lys 90	Glu	Ala	Leu	Phe	Lys 95	Glu
Lys	Gly	Asp	Leu 100	Ser	Ile	Gln	Asn	Phe 105	Arg	Phe	Leu	Ser	Phe 110	Thr	Asp
Cys	Ser	Ser 115	Lys	Glu	Ser	Ser	Pro 120	Ser	Ile	Ile	His	Gln 125	Lys	Asn	Gly
Gln 130	Leu	Ser	Leu	Arg	Asn 135	Asn	Gly	Ser	Met	Ser	Phe 140	Cys	Arg	Asn	His
Ala 145	Glu	Gly	Ser	Gly 150	Ala	Ile	Ser	Ala	Asp 155	Ala	Phe	Ser	Leu	Gln 160	
His	Asn	Tyr	Leu	Phe 165	Thr	Ala	Phe	Glu	Glu 170	Asn	Ser	Ser	Lys	Gly 175	Asn
Gly	Gly	Ala	Ile 180	Gln	Ala	Gln	Thr	Phe 185	Ser	Leu	Ser	Arg	Asn 190	Val	Ser
Pro	Ile	Ser 195	Phe	Ala	Arg	Asn 200	Arg	Ala	Asp	Leu	Asn	Gly 205	Gly	Ala	Ile
Cys	Cys 210	Ser	Asn	Leu	Ile	Cys 215	Ser	Gly	Asn	Val	Asn 220	Pro	Leu	Phe	Phe
Thr 225	Gly	Asn	Ser	Ala	Thr 230	Asn	Gly	Gly	Ala	Ile 235	Cys	Cys	Ile	Ser	Asp 240
Leu	Asn	Thr	Ser	Glu 245	Lys	Gly	Ser	Leu	Ser 250	Leu	Ala	Cys	Asn	Gln 255	Glu
Thr	Leu	Phe	Ala 260	Ser	Asn	Ser	Ala	Lys 265	Glu	Lys	Gly	Gly	Ala 270	Ile	Tyr
Ala	Lys	His 275	Met	Val	Leu	Arg	Tyr 280	Asn	Gly	Pro	Val	Ser	Phe 285	Ile	Asn
Asn	Ser	Ala	Lys	Ile	Gly	Gly	Ala	Ile	Ala	Ile	Gln	Ser	Gly	Gly	Ser

290	295	300
Leu Ser Ile Leu Ala Gly Glu Gly Ser Val Leu Phe Gln Asn Asn Ser		
305	310	315
Gln Arg Thr Ser Asp Gln Gly Leu Val Arg Asn Ala Ile Tyr Leu Xaa		320
	325	330
Lys Asp Ala Ile Leu Ser Ser Leu Glu Ala Arg Asn Gly Asp Ile Leu		335
	340	345
Phe Phe Asp Pro Ile Val Gln Glu Ser Ser Ser Lys Glu Ser Pro Leu		350
	355	360
Pro Ser Ser Leu Gln Ala Ser Val Thr Ser Pro Thr Pro Ala Thr Ala		365
	370	375
Ser Pro Leu Val Ile Gln Thr Ser Ala Asn Arg Ser Val Ile Phe Ser		380
385	390	395
Ser Glu Arg Leu Ser Glu Glu Glu Lys Thr Pro Asp Asn Leu Thr Ser		400
	405	410
Gln Leu Gln Gln Pro Ile Glu Leu Lys Ser Gly Arg Leu Val Leu Lys		415
	420	425
Asp Arg Ala Val Leu Ser Ala Pro Ser Leu Ser Gln Asp Pro Gln Ala		430
	435	440
Leu Leu Ile Met Glu Ala Gly Thr Ser Leu Lys Thr Ser Ser Asp Leu		445
450	455	460
Lys Leu Ala Thr Leu Ser Ile Pro Leu His Ser Leu Asp Thr Glu Lys		465
465	470	475
Ser Val Thr Ile His Ala Pro Asn Leu Ser Ile Gln Lys Ile Phe Leu		480
	485	490
Ser Asn Ser Gly Asp Glu Asn Phe Tyr Glu Asn Val Glu Leu Leu Ser		495
	500	505
Lys Glu Gln Asn Asn Ile Pro Leu Leu Thr Leu Pro Lys Glu Gln Ser		510
	515	520
His Leu His Leu Pro Asp Gly Asn Leu Ser Ser His Phe Gly Tyr Gln		525
530	535	540
Gly Asp Trp Thr Phe Ser Trp Lys Asp Ser Asp Glu Gly His Ser Leu		545
545	550	555
Ile Ala Asn Trp Thr Pro Lys Asn Tyr Val Pro His Pro Glu Arg Gln		560
	565	570
Ser Thr Leu Val Ala Asn Thr Leu Trp Asn Thr Tyr Ser Asp Met Gln		575
	580	585
Ala Val Gln Ser Met Ile Asn Thr Thr Ala His Gly Gly Ala Tyr Leu		590
	595	600
Phe Gly Thr Trp Gly Ser Ala Val Ser Asn Leu Phe Tyr Val His Asp		605
610	615	620
Ser Ser Gly Lys Pro Ile Asp Asn Trp His His Arg Ser Leu Gly Tyr		625
625	630	635
Leu Phe Gly Ile Ser Thr His Ser Leu Asp Asp His Ser Phe Cys Leu		640
	645	650
Ala Ala Gly Gln Leu Leu Gly Lys Ser Ser Asp Ser Phe Ile Thr Ser		655
	660	665
Thr Glu Thr Thr Ser Tyr Ile Ala Thr Val Gln Ala Gln Leu Ala Thr		670
	675	680
Ser Leu Met Lys Ile Ser Ala Gln Ala Cys Tyr Asn Glu Ser Ile His		685
	690	695
Glu Leu Lys Thr Lys Tyr Arg Ser Phe Ser Lys Glu Gly Phe Gly Ser		700
705	710	715
Trp His Ser Val Ala Val Ser Gly Glu Val Cys Ala Ser Ile Pro Ile		720
	725	730
Val Ser Asn Gly Ser Gly Leu Phe Ser Ser Phe Ser Ile Phe Ser Lys		735
	740	745
		750

Leu Gln Gly Phe Ser Gly Thr Gln Asp Gly Phe Glu Glu Ser Ser Gly
 755 760 765
 Glu Ile Arg Ser Phe Ser Ala Ser Ser Phe Arg Asn Ile Ser Leu Pro
 770 775 780
 Ile Gly Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr Tyr Tyr
 785 790 795 800
 Tyr Phe Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val Glu Ser
 805 810 815
 Gly Pro Val Val Leu Leu Lys Asn Ala Val Ser Trp Asp Ala Pro Met
 820 825 830
 Ala Asn Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn Gln Arg
 835 840 845
 Ala Leu His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val Leu Arg
 850 855 860
 Gly Gln Ser His Ser Tyr Ser Leu Asp Leu Gly Thr Thr Tyr Arg Phe
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<210> 176

<211> 982

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> (1)...(982)

<223> Xaa = Any Amino Acid

<400> 176

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 20 25 30
 Gly Glu Leu Thr Leu Lys Asn Leu Asp Asn Ser Ile Ala Ala Leu Pro
 35 40 45
 Leu Ser Cys Phe Gly Asn Leu Leu Gly Ser Phe Thr Val Leu Gly Arg
 50 55 60
 Gly His Ser Leu Thr Phe Glu Asn Ile Arg Thr Ser Thr Asn Gly Ala
 65 70 75 80
 Ala Leu Ser Asn Ser Ala Ala Asp Gly Leu Phe Thr Ile Glu Gly Phe
 85 90 95
 Lys Glu Leu Ser Phe Ser Asn Cys Asn Ser Leu Leu Ala Val Leu Pro
 100 105 110
 Ala Ala Thr Thr Asn Lys Gly Ser Gln Thr Pro Thr Thr Thr Ser Thr
 115 120 125
 Pro Ser Asn Gly Thr Ile Tyr Ser Lys Thr Asp Leu Leu Leu Leu Asn
 130 135 140
 Asn Glu Lys Phe Ser Phe Tyr Ser Asn Leu Val Ser Gly Asp Gly Gly
 145 150 155 160
 Ala Ile Asp Ala Lys Ser Leu Thr Val Gln Gly Ile Ser Lys Leu Cys
 165 170 175
 Val Phe Gln Glu Asn Thr Ala Gln Ala Asp Gly Gly Ala Cys Gln Val
 180 185 190
 Val Thr Ser Phe Ser Ala Met Ala Asn Glu Ala Pro Ile Ala Phe Val
 195 200 205
 Ala Asn Val Ala Gly Val Arg Gly Gly Gly Ile Ala Ala Val Gln Asp
 210 215 220
 Gly Gln Gln Gly Val Ser Ser Ser Thr Ser Thr Glu Asp Pro Val Val

225					230					235					240
Ser	Phe	Ser	Arg	Asn	Thr	Ala	Val	Glu	Phe	Asp	Gly	Asn	Val	Ala	Arg
				245					250					255	
Val	Gly	Gly	Gly	Ile	Tyr	Ser	Tyr	Gly	Asn	Val	Ala	Phe	Leu	Asn	Asn
			260					265					270		
Gly	Lys	Thr	Leu	Phe	Leu	Asn	Asn	Val	Ala	Ser	Pro	Val	Tyr	Ile	Ala
		275					280					285			
Ala	Lys	Gln	Pro	Thr	Ser	Gly	Gln	Ala	Ser	Asn	Thr	Ser	Asn	Asn	Tyr
	290					295					300				
Gly	Asp	Gly	Gly	Ala	Ile	Phe	Cys	Lys	Asn	Gly	Ala	Gln	Ala	Gly	Ser
305					310					315					320
Asn	Asn	Ser	Gly	Ser	Val	Ser	Phe	Asp	Gly	Glu	Gly	Val	Val	Phe	Phe
			325						330					335	
Ser	Ser	Asn	Val	Ala	Ala	Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Lys
			340					345					350		
Leu	Ser	Val	Ala	Asn	Cys	Gly	Pro	Val	Gln	Phe	Leu	Arg	Asn	Ile	Ala
		355					360					365			
Asn	Asp	Gly	Gly	Ala	Ile	Tyr	Leu	Gly	Glu	Ser	Gly	Glu	Leu	Ser	Leu
	370					375					380				
Ser	Ala	Asp	Tyr	Gly	Asp	Ile	Ile	Phe	Asp	Gly	Asn	Leu	Lys	Arg	Thr
385					390					395					400
Ala	Lys	Glu	Asn	Ala	Ala	Asp	Val	Asn	Gly	Val	Thr	Val	Ser	Ser	Gln
			405						410					415	
Ala	Ile	Ser	Met	Gly	Ser	Gly	Gly	Lys	Ile	Thr	Thr	Leu	Arg	Ala	Lys
			420					425					430		
Ala	Gly	His	Gln	Ile	Leu	Phe	Asn	Asp	Pro	Ile	Glu	Met	Ala	Asn	Gly
		435					440					445			
Asn	Asn	Gln	Pro	Ala	Gln	Ser	Ser	Lys	Leu	Leu	Lys	Ile	Asn	Asp	Gly
	450					455					460				
Glu	Gly	Tyr	Thr	Gly	Asp	Ile	Val	Phe	Ala	Asn	Gly	Ser	Ser	Thr	Leu
465					470					475					480
Tyr	Gln	Asn	Val	Thr	Ile	Glu	Gln	Gly	Arg	Ile	Val	Leu	Arg	Glu	Lys
				485					490					495	
Ala	Lys	Leu	Ser	Val	Asn	Ser	Leu	Ser	Gln	Thr	Gly	Gly	Ser	Leu	Tyr
			500					505					510		
Met	Glu	Ala	Gly	Ser	Thr	Leu	Asp	Phe	Val	Thr	Pro	Gln	Pro	Pro	Gln
		515					520					525			
Gln	Pro	Pro	Ala	Ala	Asn	Gln	Leu	Ile	Thr	Leu	Ser	Asn	Leu	His	Leu
	530					535					540				
Ser	Leu	Ser	Ser	Leu	Leu	Ala	Asn	Asn	Ala	Val	Thr	Asn	Pro	Pro	Thr
545					550					555					560
Asn	Pro	Pro	Ala	Gln	Asp	Ser	His	Pro	Ala	Val	Ile	Gly	Ser	Thr	Thr
				565					570					575	
Ala	Gly	Ser	Val	Thr	Ile	Ser	Gly	Pro	Ile	Phe	Phe	Glu	Asp	Leu	Asp
			580					585					590		
Asp	Thr	Ala	Tyr	Asp	Arg	Tyr	Asp	Trp	Leu	Gly	Ser	Asn	Gln	Lys	Ile
		595					600					605			
Asn	Val	Leu	Lys	Leu	Gln	Leu	Gly	Thr	Lys	Pro	Pro	Ala	Asn	Ala	Pro
	610					615					620				
Ser	Asp	Leu	Thr	Leu	Gly	Asn	Glu	Met	Pro	Lys	Tyr	Gly	Tyr	Gln	Gly
625					630					635					640
Ser	Trp	Lys	Leu	Ala	Trp	Asp	Pro	Asn	Thr	Ala	Asn	Asn	Gly	Pro	Tyr
				645					650					655	
Thr	Leu	Lys	Ala	Thr	Trp	Thr	Lys	Thr	Gly	Tyr	Asn	Pro	Gly	Pro	Glu
			660					665					670		
Arg	Val	Ala	Ser	Leu	Val	Pro	Asn	Ser	Leu	Trp	Gly	Ser	Ile	Leu	Asp
			675				680					685			

<210> 177
<211> 964
<212> PRT
<213> Chlamydia

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Leu	Ala	Arg	Glu 20	Val	Pro	Ser	Arg	Ile 25	Phe	Leu	Met	Pro	Asn 30	Ser	Val
Pro	Asp	Pro 35	Thr	Lys	Glu	Ser	Leu 40	Ser	Asn	Lys	Ile	Ser 45	Leu	Thr	Gly
Asp	Thr 50	His	Asn	Leu	Thr	Asn 55	Cys	Tyr	Leu	Asp	Asn 60	Leu	Arg	Tyr	Ile
Leu 65	Ala	Ile	Leu	Gln 70	Lys	Thr	Pro	Asn	Glu	Gly 75	Ala	Ala	Val	Thr 80	Ile
Thr	Asp	Tyr	Leu	Ser 85	Phe	Phe	Asp	Thr	Gln 90	Lys	Glu	Gly	Ile 95	Tyr	Phe

Ala Lys Asn Leu Thr Pro Glu Ser Gly Gly Ala Ile Gly Tyr Ala Ser
 100 105 110
 Pro Asn Ser Pro Thr Val Glu Ile Arg Asp Thr Ile Gly Pro Val Ile
 115 120 125
 Phe Glu Asn Asn Thr Cys Cys Arg Leu Phe Thr Trp Arg Asn Pro Tyr
 130 135 140
 Ala Ala Asp Lys Ile Arg Glu Gly Gly Ala Ile His Ala Gln Asn Leu
 145 150 155 160
 Tyr Ile Asn His Asn His Asp Val Val Gly Phe Met Lys Asn Phe Ser
 165 170 175
 Tyr Val Gln Gly Gly Ala Ile Ser Thr Ala Asn Thr Phe Val Val Ser
 180 185 190
 Glu Asn Gln Ser Cys Phe Leu Phe Met Asp Asn Ile Cys Ile Gln Thr
 195 200 205
 Asn Thr Ala Gly Lys Gly Gly Ala Ile Tyr Ala Gly Thr Ser Asn Ser
 210 215 220
 Phe Glu Ser Asn Asn Cys Asp Leu Phe Phe Ile Asn Asn Ala Cys Cys
 225 230 235 240
 Ala Gly Gly Ala Ile Phe Ser Pro Ile Cys Ser Leu Thr Gly Asn Arg
 245 250 255
 Gly Asn Ile Val Phe Tyr Asn Asn Arg Cys Phe Lys Asn Val Glu Thr
 260 265 270
 Ala Ser Ser Glu Ala Ser Asp Gly Gly Ala Ile Lys Val Thr Thr Arg
 275 280 285
 Leu Asp Val Thr Gly Asn Arg Gly Arg Ile Phe Phe Ser Asp Asn Ile
 290 295 300
 Thr Lys Asn Tyr Gly Gly Ala Ile Tyr Ala Pro Val Val Thr Leu Val
 305 310 315 320
 Asp Asn Gly Pro Thr Tyr Phe Ile Asn Asn Ile Ala Asn Asn Lys Gly
 325 330 335
 Gly Ala Ile Tyr Ile Asp Gly Thr Ser Asn Ser Lys Ile Ser Ala Asp
 340 345 350
 Arg His Ala Ile Ile Phe Asn Glu Asn Ile Val Thr Asn Val Thr Asn
 355 360 365
 Ala Asn Gly Thr Ser Thr Ser Ala Asn Pro Pro Arg Arg Asn Ala Ile
 370 375 380
 Thr Val Ala Ser Ser Ser Gly Glu Ile Leu Leu Gly Ala Gly Ser Ser
 385 390 395 400
 Gln Asn Leu Ile Phe Tyr Asp Pro Ile Glu Val Ser Asn Ala Gly Val
 405 410 415
 Ser Val Ser Phe Asn Lys Glu Ala Asp Gln Thr Gly Ser Val Val Phe
 420 425 430
 Ser Gly Ala Thr Val Asn Ser Ala Asp Phe His Gln Arg Asn Leu Gln
 435 440 445
 Thr Lys Thr Pro Ala Pro Leu Thr Leu Ser Asn Gly Phe Leu Cys Ile
 450 455 460
 Glu Asp His Ala Gln Leu Thr Val Asn Arg Phe Thr Gln Thr Gly Gly
 465 470 475 480
 Val Val Ser Leu Gly Asn Gly Ala Val Leu Ser Cys Tyr Lys Asn Gly
 485 490 495
 Thr Gly Asp Ser Ala Ser Asn Ala Ser Ile Thr Leu Lys His Ile Gly
 500 505 510
 Leu Asn Leu Ser Ser Ile Leu Lys Ser Gly Ala Glu Ile Pro Leu Leu
 515 520 525
 Trp Val Glu Pro Thr Asn Asn Ser Asn Asn Tyr Thr Ala Asp Thr Ala
 530 535 540
 Ala Thr Phe Ser Leu Ser Asp Val Lys Leu Ser Leu Ile Asp Asp Tyr

09841133-042301

545					550					555				560
Gly	Asn	Ser	Pro	Tyr	Glu	Ser	Thr	Asp	Leu	Thr	His	Ala	Leu	Ser
				565					570					575
Gln	Pro	Met	Leu	Ser	Ile	Ser	Glu	Ala	Ser	Asp	Asn	Gln	Leu	Gln
			580					585					590	
Glu	Asn	Ile	Asp	Phe	Ser	Gly	Leu	Asn	Val	Pro	His	Tyr	Gly	Trp
			595				600					605		
Gly	Leu	Trp	Thr	Trp	Gly	Trp	Ala	Lys	Thr	Gln	Asp	Pro	Glu	Pro
	610				615					620				Ala
Ser	Ser	Ala	Thr	Ile	Thr	Asp	Pro	Gln	Lys	Ala	Asn	Arg	Phe	His
	625				630					635				640
Thr	Leu	Leu	Leu	Thr	Trp	Leu	Pro	Ala	Gly	Tyr	Val	Pro	Ser	Pro
				645					650					655
His	Arg	Ser	Pro	Leu	Ile	Ala	Asn	Thr	Leu	Trp	Gly	Asn	Met	Leu
			660					665					670	Leu
Ala	Thr	Glu	Ser	Leu	Lys	Asn	Ser	Ala	Glu	Leu	Thr	Pro	Ser	Gly
		675					680					685		His
Pro	Phe	Trp	Gly	Ile	Thr	Gly	Gly	Gly	Leu	Gly	Met	Met	Val	Tyr
	690					695					700			Gln
Asp	Pro	Arg	Glu	Asn	His	Pro	Gly	Phe	His	Met	Arg	Ser	Ser	Gly
	705				710					715				720
Ser	Ala	Gly	Met	Ile	Ala	Gly	Gln	Thr	His	Thr	Phe	Ser	Leu	Lys
				725					730					735
Ser	Gln	Thr	Tyr	Thr	Lys	Leu	Asn	Glu	Arg	Tyr	Ala	Lys	Asn	Asn
			740					745					750	Val
Ser	Ser	Lys	Asn	Tyr	Ser	Cys	Gln	Gly	Glu	Met	Leu	Phe	Ser	Leu
		755					760					765		Gln
Glu	Gly	Phe	Leu	Leu	Thr	Lys	Leu	Val	Gly	Leu	Tyr	Ser	Tyr	Gly
	770					775					780			Asp
His	Asn	Cys	His	His	Phe	Tyr	Thr	Gln	Gly	Glu	Asn	Leu	Thr	Ser
	785				790					795				Gln
Gly	Thr	Phe	Arg	Ser	Gln	Thr	Met	Gly	Gly	Ala	Val	Phe	Phe	Asp
				805				810						Leu
Pro	Met	Lys	Pro	Phe	Gly	Ser	Thr	His	Ile	Leu	Thr	Ala	Pro	Phe
			820					825					830	Leu
Gly	Ala	Leu	Gly	Ile	Tyr	Ser	Ser	Leu	Ser	His	Phe	Thr	Glu	Val
			835					840				845		Gly
Ala	Tyr	Pro	Arg	Ser	Phe	Ser	Thr	Lys	Thr	Pro	Leu	Ile	Asn	Val
	850					855					860			Leu
Val	Pro	Ile	Gly	Val	Lys	Gly	Ser	Phe	Met	Asn	Ala	Thr	His	Arg
	865				870				875					Pro
Gln	Ala	Trp	Thr	Val	Glu	Leu	Ala	Tyr	Gln	Pro	Val	Leu	Tyr	Arg
				885				890					895	Gln
Glu	Pro	Gly	Ile	Ala	Thr	Gln	Leu	Leu	Ala	Ser	Lys	Gly	Ile	Trp
			900					905					910	Phe
Gly	Ser	Gly	Ser	Pro	Ser	Ser	Arg	His	Ala	Met	Ser	Tyr	Lys	Ile
		915					920					925		Ser
Gln	Gln	Thr	Gln	Pro	Leu	Ser	Trp	Leu	Thr	Leu	His	Phe	Gln	Tyr
	930					935					940			His
Gly	Phe	Tyr	Ser	Ser	Ser	Thr	Phe	Cys	Asn	Tyr	Leu	Asn	Gly	Glu
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Ala	Leu	Arg	Phe											960

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 <211> 1530
 <212> PRT

0984133-042301

<213> Chlamydia

<400> 178

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Ser	Val	Val	Ala	Ala	Ile	Leu	Ala	Ser	Val	Ser	Gly	Leu	Ala	Ser	Cys
			20					25					30		
Val	Asp	Leu	His	Ala	Gly	Gly	Gln	Ser	Val	Asn	Glu	Leu	Val	Tyr	Val
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Gly	Pro	Gln	Ala	Val	Leu	Leu	Leu	Asp	Gln	Ile	Arg	Asp	Leu	Phe	Val
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Gly	Ser	Lys	Asp	Ser	Gln	Ala	Glu	Gly	Gln	Tyr	Arg	Leu	Ile	Val	Gly
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Asp	Pro	Ser	Ser	Phe	Gln	Glu	Lys	Asp	Ala	Asp	Thr	Leu	Pro	Gly	Lys
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Val	Glu	Gln	Ser	Thr	Leu	Phe	Ser	Val	Thr	Asn	Pro	Val	Val	Phe	Gln
			100					105					110		
Gly	Val	Asp	Gln	Gln	Asp	Gln	Val	Ser	Ser	Gln	Gly	Leu	Ile	Cys	Ser
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Phe	Thr	Ser	Ser	Asn	Leu	Asp	Ser	Pro	Arg	Asp	Gly	Glu	Ser	Phe	Leu
	130					135					140				
Gly	Ile	Ala	Phe	Val	Gly	Asp	Ser	Ser	Lys	Ala	Gly	Ile	Thr	Leu	Thr
145					150					155					160
Asp	Val	Lys	Ala	Ser	Leu	Ser	Gly	Ala	Ala	Leu	Tyr	Ser	Thr	Glu	Asp
				165					170					175	
Leu	Ile	Phe	Glu	Lys	Ile	Lys	Gly	Gly	Leu	Glu	Phe	Ala	Ser	Cys	Ser
			180					185					190		
Ser	Leu	Glu	Gln	Gly	Gly	Ala	Cys	Ala	Ala	Gln	Ser	Ile	Leu	Ile	His
		195					200					205			
Asp	Cys	Gln	Gly	Leu	Gln	Val	Lys	His	Cys	Thr	Thr	Ala	Val	Asn	Ala
	210					215						220			
Glu	Gly	Ser	Ser	Ala	Asn	Asp	His	Leu	Gly	Phe	Gly	Gly	Gly	Ala	Phe
225					230					235					240
Phe	Val	Thr	Gly	Ser	Leu	Ser	Gly	Glu	Lys	Ser	Leu	Tyr	Met	Pro	Ala
				245					250					255	
Gly	Asp	Met	Val	Val	Ala	Asn	Cys	Asp	Gly	Ala	Ile	Ser	Phe	Glu	Gly
			260					265					270		
Asn	Ser	Ala	Asn	Phe	Ala	Asn	Gly	Gly	Ala	Ile	Ala	Ala	Ser	Gly	Lys
		275					280					285			
Val	Leu	Phe	Val	Ala	Asn	Asp	Lys	Lys	Thr	Ser	Phe	Ile	Glu	Asn	Arg
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Ala	Leu	Ser	Gly	Gly	Ala	Ile	Ala	Ala	Ser	Ser	Asp	Ile	Ala	Phe	Gln
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Asn	Cys	Ala	Glu	Leu	Val	Phe	Lys	Gly	Asn	Cys	Ala	Ile	Gly	Thr	Glu
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Asp	Lys	Gly	Ser	Leu	Gly	Gly	Gly	Ala	Ile	Ser	Ser	Leu	Gly	Thr	Val
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Leu	Leu	Gln	Gly	Asn	His	Gly	Ile	Thr	Cys	Asp	Lys	Asn	Glu	Ser	Ala
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Ser	Gln	Gly	Gly	Ala	Ile	Phe	Gly	Lys	Asn	Cys	Gln	Ile	Ser	Asp	Asn
	370					375					380				
Glu	Gly	Pro	Val	Val	Phe	Arg	Asp	Ser	Thr	Ala	Cys	Leu	Gly	Gly	Gly
385					390					395					400
Ala	Ile	Ala	Ala	Gln	Glu	Ile	Val	Ser	Ile	Gln	Asn	Asn	Gln	Ala	Gly
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Ile	Ser	Phe	Glu	Gly	Gly	Lys	Ala	Ser	Phe	Gly	Gly	Gly	Ile	Ala	Cys
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09041133 042301

Gly Ser Phe Ser Ser Ala Gly Gly Ala Ser Val Leu Gly Thr Ile Asp
 435 440 445
 Ile Ser Lys Asn Leu Gly Ala Ile Ser Phe Ser Arg Thr Leu Cys Thr
 450 455 460
 Thr Ser Asp Leu Gly Gln Met Glu Tyr Gln Gly Gly Gly Ala Leu Phe
 465 470 475 480
 Gly Glu Asn Ile Ser Leu Ser Glu Asn Ala Gly Val Leu Thr Phe Lys
 485 490 495
 Asp Asn Ile Val Lys Thr Phe Ala Ser Asn Gly Lys Ile Leu Gly Gly
 500 505 510
 Gly Ala Ile Leu Ala Thr Gly Lys Val Glu Ile Thr Asn Asn Ser Gly
 515 520 525
 Gly Ile Ser Phe Thr Gly Asn Ala Arg Ala Pro Gln Ala Leu Pro Thr
 530 535 540
 Gln Glu Glu Phe Pro Leu Phe Ser Lys Lys Glu Gly Arg Pro Leu Ser
 545 550 555 560
 Ser Gly Tyr Ser Gly Gly Ala Ile Leu Gly Arg Glu Val Ala Ile
 565 570 575
 Leu His Asn Ala Ala Val Val Phe Glu Gln Asn Arg Leu Gln Cys Ser
 580 585 590
 Glu Glu Glu Ala Thr Leu Leu Gly Cys Cys Gly Gly Gly Ala Val His
 595 600 605
 Gly Met Asp Ser Thr Ser Ile Val Gly Asn Ser Ser Val Arg Phe Gly
 610 615 620
 Asn Asn Tyr Ala Met Gly Gln Gly Val Ser Gly Gly Ala Leu Leu Ser
 625 630 635 640
 Lys Thr Val Gln Leu Ala Gly Asn Gly Ser Val Asp Phe Ser Arg Asn
 645 650 655
 Ile Ala Ser Leu Gly Gly Gly Ala Leu Gln Ala Ser Glu Gly Asn Cys
 660 665 670
 Glu Leu Val Asp Asn Gly Tyr Val Leu Phe Arg Asp Asn Arg Gly Arg
 675 680 685
 Val Tyr Gly Gly Ala Ile Ser Cys Leu Arg Gly Asp Val Val Ile Ser
 690 695 700
 Gly Asn Lys Gly Arg Val Glu Phe Lys Asp Asn Ile Ala Thr Arg Leu
 705 710 715 720
 Tyr Val Glu Glu Thr Val Glu Lys Val Glu Glu Val Glu Pro Ala Pro
 725 730 735
 Glu Gln Lys Asp Asn Asn Glu Leu Ser Phe Leu Gly Ser Val Glu Gln
 740 745 750
 Ser Phe Ile Thr Ala Ala Asn Gln Ala Leu Phe Ala Ser Glu Asp Gly
 755 760 765
 Asp Leu Ser Pro Glu Ser Ser Ile Ser Ser Glu Glu Leu Ala Lys Arg
 770 775 780
 Arg Glu Cys Ala Gly Gly Ala Ile Phe Ala Lys Arg Val Arg Ile Val
 785 790 795 800
 Asp Asn Gln Glu Ala Val Val Phe Ser Asn Asn Phe Ser Asp Ile Tyr
 805 810 815
 Gly Gly Ala Ile Phe Thr Gly Ser Leu Arg Glu Glu Asp Lys Leu Asp
 820 825 830
 Gly Gln Ile Pro Glu Val Leu Ile Ser Gly Asn Ala Gly Asp Val Val
 835 840 845
 Phe Ser Gly Asn Ser Ser Lys Arg Asp Glu His Leu Pro His Thr Gly
 850 855 860
 Gly Gly Ala Ile Cys Thr Gln Asn Leu Thr Ile Ser Gln Asn Thr Gly
 865 870 875 880
 Asn Val Leu Phe Tyr Asn Asn Val Ala Cys Ser Gly Gly Ala Val Arg

				885						890						895	
Ile	Glu	Asp	His	Gly	Asn	Val	Leu	Leu	Glu	Ala	Phe	Gly	Gly	Asp	Ile		
			900						905				910				
Val	Phe	Lys	Gly	Asn	Ser	Ser	Phe	Arg	Ala	Gln	Gly	Ser	Asp	Ala	Ile		
		915					920					925					
Tyr	Phe	Ala	Gly	Lys	Glu	Ser	His	Ile	Thr	Ala	Leu	Asn	Ala	Thr	Glu		
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Gly	His	Ala	Ile	Val	Phe	His	Asp	Ala	Leu	Val	Phe	Glu	Asn	Leu	Lys		
945					950					955					960		
Glu	Arg	Lys	Ser	Ala	Glu	Val	Leu	Leu	Ile	Asn	Ser	Arg	Glu	Asn	Pro		
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Gly	Tyr	Thr	Gly	Ser	Ile	Arg	Phe	Leu	Glu	Ala	Glu	Ser	Lys	Val	Pro		
			980				985						990				
Gln	Cys	Ile	His	Val	Gln	Gln	Gly	Ser	Leu	Glu	Leu	Leu	Asn	Gly	Ala		
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Thr	Leu	Cys	Ser	Tyr	Gly	Phe	Lys	Gln	Asp	Ala	Gly	Ala	Lys	Leu	Val		
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Gln	Gly	His	Ala	Ile	Ser	Lys	Pro	Glu	Ala	Glu	Ile	Glu	Ser	Ser	Ser		
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Glu	Pro	Glu	Gly	Ala	His	Ser	Leu	Trp	Ile	Ala	Lys	Asn	Ala	Gln	Thr		
			1060					1065					1070				
Thr	Val	Pro	Met	Val	Asp	Ile	His	Thr	Ile	Ser	Val	Asp	Leu	Ala	Ser		
		1075				1080						1085					
Phe	Ser	Ser	Ser	Gln	Gln	Glu	Gly	Thr	Val	Glu	Ala	Pro	Gln	Val	Ile		
	1090					1095					1100						
Val	Pro	Gly	Gly	Ser	Tyr	Val	Arg	Ser	Gly	Glu	Leu	Asn	Leu	Glu	Leu		
1105					1110					1115					1120		
Val	Asn	Thr	Thr	Gly	Thr	Gly	Tyr	Glu	Asn	His	Ala	Leu	Leu	Lys	Asn		
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Glu	Ala	Lys	Val	Pro	Leu	Met	Ser	Phe	Val	Ala	Ser	Ser	Asp	Glu	Ala		
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Ala	Thr	Pro	Glu	Ile	Glu	Glu	Asp	Thr	Tyr	Gly	His	Met	Gly	Asp	Trp		
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Ser	Glu	Ala	Lys	Ile	Gln	Asp	Gly	Thr	Leu	Val	Ile	Asn	Trp	Asn	Pro		
1185					1190					1195					1200		
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Ala	Leu	Trp	Glu	Glu	Gly	Ala	Val	Leu	Ser	Ala	Leu	Lys	Asn	Ala	Arg		

Asp Met Lys Thr Arg Tyr Gly Val Leu Gly Glu Ser Ser Ala Ser Trp
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 Thr Ser Arg Gly Val Leu Ala Asp Ala Leu Val Glu Tyr Arg Ser Leu
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 Val Gly Pro Val Arg Pro Thr Phe Tyr Ala Leu His Phe Asn Pro Tyr
 1380 1385 1390
 Val Glu Val Ser Tyr Ala Ser Met Lys Phe Pro Gly Phe Thr Glu Gln
 1395 1400 1405
 Gly Arg Glu Ala Arg Ser Phe Glu Asp Ala Ser Leu Thr Asn Ile Thr
 1410 1415 1420
 Ile Pro Leu Gly Met Lys Phe Glu Leu Ala Phe Ile Lys Gly Gln Phe
 1425 1430 1435 1440
 Ser Glu Val Asn Ser Leu Gly Ile Ser Tyr Ala Trp Glu Ala Tyr Arg
 1445 1450 1455
 Lys Val Glu Gly Ala Val Gln Leu Leu Glu Ala Gly Phe Asp Trp
 1460 1465 1470
 Glu Gly Ala Pro Met Asp Leu Pro Arg Gln Glu Leu Arg Val Ala Leu
 1475 1480 1485
 Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe Ser Thr Val Leu Gly Leu
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 Thr Ala Phe Cys Gly Gly Phe Thr Ser Thr Asp Ser Lys Leu Gly Tyr
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<400> 179
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 Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln Ala Phe Thr
 35 40 45
 Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser Val
 50 55 60
 Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg Lys His Leu
 65 70 75 80
 Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser Ser
 85 90 95
 Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala Pro Ser Ser
 100 105 110
 Gly Glu Thr Asp Lys Lys Thr Glu Glu Glu Leu Asp Asn Gly Gly Ile
 115 120 125
 Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln Asp Ser Leu
 130 135 140
 Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe Phe Gly Glu
 145 150 155 160
 Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly Ala
 165 170 175
 Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu Leu
 180 185 190
 Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val Tyr Ala Lys
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Glu	Arg	Val	Ser	Leu	Glu	Asn	Val	Thr	Glu	Ala	Thr	Phe	Ser	Ser	Asn
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Gly	Gly	Glu	Gln	Gly	Gly	Gly	Gly	Ile	Tyr	Ser	Glu	Gln	Asp	Met	Leu
225					230					235					240
Ile	Ser	Asp	Cys	Asn	Asn	Val	His	Phe	Gln	Gly	Asn	Ala	Ala	Gly	Ala
				245					250					255	
Thr	Ala	Val	Lys	Gln	Cys	Leu	Asp	Glu	Glu	Met	Ile	Val	Leu	Leu	Thr
			260					265					270		
Glu	Cys	Val	Asp	Ser	Leu	Ser	Glu	Asp	Thr	Leu	Asp	Ser	Thr	Pro	Glu
		275					280					285			
Thr	Glu	Gln	Thr	Lys	Ser	Asn	Gly	Asn	Gln	Asp	Gly	Ser	Ser	Glu	Thr
	290					295					300				
Lys	Asp	Thr	Gln	Val	Ser	Glu	Ser	Pro	Glu	Ser	Thr	Pro	Ser	Pro	Asp
305					310					315					320
Asp	Val	Leu	Gly	Lys	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Lys	Ser	Leu	Thr
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Ile	Thr	Gly	Ile	Thr	Gly	Thr	Ile	Asp	Phe	Val	Ser	Asn	Ile	Ala	Thr
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Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln	His	Gly	Gly
	370					375					380				
Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr	Thr	Ser	Glu
385					390					395					400
Ser	Ile	Thr	Thr	Pro	Pro	Leu	Val	Gly	Glu	Val	Ile	Phe	Ser	Glu	Asn
				405					410					415	
Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys	Leu	Ser	Leu
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Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala	Lys	Glu	Ser
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Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro	Thr	Thr	Asp	Thr
	450					455					460				
Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser	Thr	Pro	Glu
465					470					475					480
Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala	Ser	Thr	Ala	Glu
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Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln	Thr	Asp	Gln
			500					505					510		
Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val	Ser	Ile	Glu	Asn
		515				520						525			
Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala	Lys	Lys	Gly	Gly
	530					535					540				
Ala	Ile	Tyr	Gly	Lys	Lys	Ala	Lys	Leu	Ser	Arg	Ile	Asn	Asn	Leu	Glu
545					550					555					560
Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly	Leu	Cys	Leu	Thr
				565					570					575	
Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser	His	Tyr	Asn
			580					585					590		
Ser	Ala	Ala	Lys	Glu	Gly	Gly	Val	Ile	His	Ser	Lys	Thr	Val	Thr	Leu
		595					600					605			
Ser	Asn	Leu	Lys	Ser	Thr	Phe	Thr	Phe	Ala	Asp	Asn	Thr	Val	Lys	Ala
	610					615					620				
Ile	Val	Glu	Ser	Thr	Pro	Glu	Ala	Pro	Glu	Glu	Ile	Pro	Pro	Val	Glu
625					630					635					640
Gly	Glu	Glu	Ser	Thr	Ala	Thr	Glu	Asn	Pro	Asn	Ser	Asn	Thr	Glu	Gly
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Ser	Ser	Ala	Asn	Thr	Asn	Leu	Glu	Gly	Ser	Gln	Gly	Asp	Thr	Ala	Asp

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Thr	Gly	Thr 675	Gly	Val	Val	Asn	Asn	Glu	Ser	Gln	Asp	Thr 685	Ser	Asp	Thr			
Gly	Asn	Ala	Glu	Ser	Gly	Glu	Gln	Leu	Gln	Asp	Ser	Thr	Gln	Ser	Asn			
Glu	Glu	Asn	Thr	Leu	Pro	Asn	Ser	Ser	Ile	Asp	Gln	Ser	Asn	Glu	Asn			
705					710					715					720			
Thr	Asp	Glu	Ser	Ser	Asp	Ser	His	Thr	Glu	Ile	Thr	Asp	Glu	Ser				
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Val	Ser	Ser	Ser	Ser	Lys	Ser	Gly	Ser	Ser	Thr	Pro	Gln	Asp	Gly	Gly			
			740					745					750					
Ala	Ala	Ser	Ser	Gly	Ala	Pro	Ser	Gly	Asp	Gln	Ser	Ile	Ser	Ala	Asn			
		755					760					765						
Ala	Cys	Leu	Ala	Lys	Ser	Tyr	Ala	Ala	Ser	Thr	Asp	Ser	Ser	Pro	Val			
	770					775					780							
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785					790					795					800			
Ser	Ser	Ser	Ser	Gly	Asp	Ser	Ala	Gly	Asp	Ser	Glu	Gly	Pro	Thr	Glu			
				805					810					815				
Pro	Glu	Ala	Gly	Ser	Thr	Thr	Glu	Thr	Pro	Thr	Leu	Ile	Gly	Gly	Gly			
			820					825					830					
Ala	Ile	Tyr	Gly	Glu	Thr	Val	Lys	Ile	Glu	Asn	Phe	Ser	Gly	Gln	Gly			
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Ile	Phe	Ser	Gly	Asn	Lys	Ala	Ile	Asp	Asn	Thr	Thr	Glu	Gly	Ser	Ser			
	850					855					860							
Ser	Lys	Ser	Asn	Val	Leu	Gly	Gly	Ala	Val	Tyr	Ala	Lys	Thr	Leu	Phe			
865				870						875					880			
Asn	Leu	Asp	Ser	Gly	Ser	Ser	Arg	Arg	Thr	Val	Thr	Phe	Ser	Gly	Asn			
			885						890					895				
Thr	Val	Ser	Ser	Gln	Ser	Thr	Thr	Gly	Gln	Val	Ala	Gly	Gly	Ala	Ile			
			900					905					910					
Tyr	Ser	Pro	Thr	Val	Thr	Ile	Ala	Thr	Pro	Val	Val	Phe	Ser	Lys	Asn			
		915					920					925						
Ser	Ala	Thr	Asn	Asn	Ala	Asn	Asn	Ala	Thr	Asp	Thr	Gln	Arg	Lys	Asp			
		930				935					940							
Thr	Phe	Gly	Gly	Ala	Ile	Gly	Ala	Thr	Ser	Ala	Val	Ser	Leu	Ser	Gly			
945				950						955					960			
Gly	Ala	His	Phe	Leu	Glu	Asn	Val	Ala	Asp	Leu	Gly	Ser	Ala	Ile	Gly			
			965						970					975				
Leu	Val	Pro	Asp	Thr	Gln	Asn	Thr	Glu	Thr	Val	Lys	Leu	Glu	Ser	Gly			
			980					985					990					
Ser	Tyr	Tyr	Phe	Glu	Lys	Asn	Lys	Ala	Leu	Lys	Arg	Ala	Thr	Ile	Tyr			
		995				1000						1005						
Ala	Pro	Val	Val	Ser	Ile	Lys	Ala	Tyr	Thr	Ala	Thr	Phe	Asn	Gln	Asn			
		1010				1015						1020						
Arg	Ser	Leu	Glu	Glu	Gly	Ser	Ala	Ile	Tyr	Phe	Thr	Lys	Glu	Ala	Ser			
1025																		

Gly	Thr	Ser	Thr	Phe	Cys	Ser	Ile	Ala	Gly	Asp	Val	Lys	Leu	Thr	Met
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Gln	Ala	Ala	Lys	Gly	Lys	Thr	Ile	Ser	Phe	Phe	Asp	Ala	Ile	Arg	Thr
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Ser	Thr	Lys	Lys	Thr	Gly	Thr	Gln	Ala	Thr	Ala	Tyr	Asp	Thr	Leu	Asp
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Ile	Asn	Lys	Ser	Glu	Asp	Ser	Glu	Thr	Val	Asn	Ser	Ala	Phe	Thr	Gly
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Thr	Ile	Leu	Phe	Ser	Ser	Glu	Leu	His	Glu	Asn	Lys	Ser	Tyr	Ile	Pro
1185					1190					1195					1200
Gln	Asn	Val	Val	Leu	His	Ser	Gly	Ser	Leu	Val	Leu	Lys	Pro	Asn	Thr
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Glu	Leu	His	Val	Ile	Ser	Phe	Glu	Gln	Lys	Glu	Gly	Ser	Ser	Leu	Val
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Met	Thr	Pro	Gly	Ser	Val	Leu	Ser	Asn	Gln	Thr	Val	Ala	Asp	Gly	Ala
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Gln	Asn	Pro	Ala	Leu	Arg	Ser	Asp	Gln	Gln	Ile	Ser	Leu	Leu	Val	Leu
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 Thr Thr Thr Pro Asp Pro Lys Gly Gly Gly Ala Phe Tyr Asn Ala His
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Glu	Gln	Pro	Ala	Ala	Ala	Ser	Ala	Ala	Thr	Ser	Thr	Pro	Lys	Ser	Ala
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Lys	Glu	Thr	Gln	Asp	Pro	Asn	Ala	Asp	Thr	Asp	Leu	Leu	Ile	Asp	Tyr		
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Cys	Pro	Ala	Thr	Phe	Ser	Asn	Asn	Thr	Ala	Ser	Ile	Ala	Thr	Pro	Lys		
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Gln Gly Asp Thr	Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val					
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Lys Leu Ser Leu	Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp					
	1155	1160		1165		
Cys Val His Thr	Ser Thr Lys Lys Thr Gly Ser Thr Gln Asn Val Tyr					
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Glu Thr Leu Asp	Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly					
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Gln Asn Ala Ile	Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr					
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Glu Leu His Val	Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile					
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Gln Ala Gly Glu	Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr					
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Thr Ser Ser Ala	Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr					
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Asn Pro Lys Arg	Ile Ser Ala Ala Val Pro Ser Gly Ser Ala Ala Thr					
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Thr Pro Thr Met	Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr					
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Asp Leu Asp Val	Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val					
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Gln Val Tyr Asp	Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly					
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Tyr Met Gly Thr	Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu					
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Gln Ala Arg Trp	Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro					
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Arg Phe Asp Asp	Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly					
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Thr Phe Leu Ala	Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr					
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Tyr Ser Arg Gly	Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp					
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Gln Ala Ser Val	Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys					
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 <213> Chlamydia

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<211> 866

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> (1)...(866)

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<400> 189

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Phe Phe Glu Asp Cys Thr Met Glu Ser Leu Phe Pro Ala Leu Cys Ala
35     40     45
His Ala Ser Gln Asp Asp Pro Leu Tyr Val Leu Gly Asn Ser Tyr Cys
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Trp Phe Val Ser Lys Leu His Ile Thr Asp Pro Lys Glu Ala Leu Phe
65     70     75     80
Lys Glu Lys Gly Asp Leu Ser Ile Gln Asn Phe Arg Phe Leu Ser Phe
85     90     95
Thr Asp Cys Ser Ser Lys Glu Ser Ser Pro Ser Ile Ile His Gln Lys
100    105    110
Asn Gly Gln Leu Ser Leu Arg Asn Asn Gly Ser Met Ser Phe Cys Arg
115    120    125
Asn His Ala Glu Gly Ser Gly Gly Ala Ile Ser Ala Asp Ala Phe Ser
130    135    140
Leu Gln His Asn Tyr Leu Phe Thr Ala Phe Glu Asn Ser Ser Lys
145    150    155    160
Gly Asn Gly Gly Ala Ile Gln Ala Gln Thr Phe Ser Leu Ser Arg Asn

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Phe	Phe 210	Thr	Gly	Asn	Ser	Ala 215	Thr	Asn	Gly	Gly	Xaa 220	Ile	Cys	Cys	Ile	
Ser 225	Asp	Leu	Asn	Thr	Ser 230	Glu	Lys	Gly	Ser	Leu 235	Ser	Leu	Ala	Cys	Asn 240	
Gln	Xaa	Thr	Leu	Phe 245	Ala	Ser	Asn	Ser	Ala 250	Lys	Glu	Lys	Gly	Gly	Ala 255	
Ile	Tyr	Ala	Lys 260	His	Met	Val	Leu	Arg 265	Tyr	Asn	Gly	Pro 270	Val	Ser	Phe	
Ile	Asn	Asn 275	Ser	Ala	Lys	Ile	Gly 280	Gly	Ala	Ile	Ala	Ile 285	Gln	Ser	Gly	
Gly	Ser 290	Leu	Ser	Ile	Leu	Ala 295	Gly	Glu	Gly	Ser	Val 300	Leu	Phe	Gln	Asn	
Asn 305	Ser	Gln	Arg	Thr	Ser 310	Asp	Gln	Gly	Leu	Val 315	Arg	Asn	Ala	Ile	Tyr 320	
Leu	Glu	Lys	Asp 325	Ala	Ile	Leu	Ser	Ser	Leu 330	Glu	Ala	Arg	Asn	Gly	Asp 335	
Ile	Leu	Phe	Phe 340	Asp	Pro	Ile	Val	Gln 345	Glu	Ser	Ser	Ser	Lys 350	Glu	Ser	
Pro	Leu	Pro 355	Ser	Ser	Leu	Gln	Ala 360	Ser	Val	Thr	Ser	Pro 365	Thr	Pro	Ala	
Thr	Ala 370	Ser	Pro	Leu	Val	Ile 375	Gln	Thr	Ser	Ala	Asn 380	Arg	Ser	Val	Ile	
Phe 385	Ser	Ser	Glu	Arg	Leu 390	Ser	Glu	Glu	Glu	Lys 395	Thr	Pro	Asp	Asn	Leu 400	
Thr	Ser	Gln	Leu	Gln 405	Gln	Pro	Ile	Glu	Leu 410	Lys	Ser	Gly	Arg	Leu	Val 415	
Leu	Lys	Asp	Arg 420	Ala	Val	Leu	Ser	Xaa 425	Pro	Ser	Leu	Ser	Gln	Asp	Pro	
Gln	Ala	Leu 435	Leu	Ile	Met	Glu	Ala 440	Gly	Thr	Ser	Leu	Lys 445	Thr	Ser	Xaa	
Asp	Leu 450	Lys	Leu	Xaa	Thr 455	Xaa	Ser	Ile	Pro	Leu	His 460	Ser	Leu	Asp	Thr	
Glu 465	Lys	Ser	Val	Thr 470	Ile	His	Ala	Pro	Asn	Leu 475	Ser	Ile	Gln	Lys	Ile 480	
Phe	Leu	Ser	Asn 485	Ser	Gly	Asp	Glu	Asn	Phe 490	Tyr	Glu	Asn	Val	Glu	Leu 495	
Leu	Ser	Lys	Glu 500	Gln	Asn	Asn	Ile	Pro 505	Leu	Leu	Thr	Leu	Pro 510	Lys	Glu	
Gln	Ser	His 515	Leu	His	Leu	Pro	Asp 520	Gly	Asn	Leu	Ser	Ser 525	His	Phe	Gly	
Tyr	Gln 530	Gly	Asp	Trp	Thr	Phe 535	Ser	Trp	Lys	Asp	Ser 540	Asp	Glu	Gly	His	
Ser 545	Leu	Ile	Ala	Asn 550	Trp	Thr	Pro	Lys	Asn	Tyr 555	Val	Pro	His	Pro	Glu 560	
Arg	Gln	Ser	Thr 565	Leu	Val	Ala	Asn	Thr	Leu 570	Trp	Asn	Thr	Tyr	Ser	Asp	
Met	Gln	Ala 580	Val	Gln	Ser	Met	Ile 585	Asn	Thr	Thr	Ala	His 590	Gly	Gly	Ala	
Tyr	Leu	Phe 595	Gly	Thr	Trp	Gly	Ser 600	Ala	Val	Ser	Asn	Leu 605	Phe	Tyr	Val	
His	Asp 610	Ser	Ser	Gly	Lys	Pro 615	Ile	Asp	Asn	Trp	His 620	His	Arg	Ser	Leu	

Gly Tyr Leu Phe Gly Ile Ser Thr His Ser Leu Asp Asp His Ser Phe
 625 630 635 640
 Cys Leu Ala Ala Gly Gln Leu Leu Gly Lys Ser Ser Asp Ser Phe Ile
 645 650 655
 Thr Ser Thr Glu Thr Thr Ser Tyr Ile Ala Thr Val Gln Ala Gln Leu
 660 665 670
 Ala Thr Ser Leu Met Lys Ile Ser Ala Gln Ala Cys Tyr Asn Glu Ser
 675 680 685
 Ile His Glu Leu Lys Thr Lys Tyr Arg Ser Phe Ser Lys Glu Gly Phe
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 Gly Ser Trp His Ser Val Ala Val Ser Gly Glu Val Cys Ala Ser Ile
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 Pro Ile Val Ser Asn Gly Ser Gly Leu Phe Ser Ser Phe Ser Ile Phe
 725 730 735
 Ser Lys Leu Gln Gly Phe Ser Gly Thr Gln Asp Gly Phe Glu Glu Ser
 740 745 750
 Ser Gly Glu Ile Arg Ser Phe Ser Ala Ser Ser Phe Arg Asn Ile Ser
 755 760 765
 Leu Pro Ile Gly Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr
 770 775 780
 Tyr Tyr Tyr Phe Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val
 785 790 795 800
 Glu Ser Gly Pro Val Leu Leu Lys Asn Ala Val Ser Trp Asp Ala
 805 810 815
 Pro Met Ala Asn Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn
 820 825 830
 Gln Arg Ala Leu His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val
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 850 855 860
 Arg Phe
 865

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 <213> Chlamydia

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 35 40 45
 Ser Gly Thr Thr Val Phe Ser Ala Gly Glu Leu Thr Leu Lys Asn Leu
 50 55 60
 Asp Asn Ser Ile Ala Ala Leu Pro Leu Ser Cys Phe Gly Asn Leu Leu
 65 70 75 80
 Gly Ser Phe Thr Val Leu Gly Arg Gly His Ser Leu Thr Phe Glu Asn
 85 90 95
 Ile Arg Thr Ser Thr Asn Gly Ala Ala Leu Ser Asn Ser Ala Ala Asp
 100 105 110
 Gly Leu Phe Thr Ile Glu Gly Phe Lys Glu Leu Ser Phe Ser Asn Cys
 115 120 125
 Asn Ser Leu Leu Ala Val Leu Pro Ala Ala Thr Thr Asn Lys Gly Ser
 130 135 140

09041132 042301

Gln 145	Thr	Pro	Thr	Thr	Thr 150	Ser	Thr	Pro	Ser	Asn 155	Gly	Thr	Ile	Tyr	Ser 160
Lys	Thr	Asp	Leu	Leu	Leu 165	Leu	Asn	Asn	Glu	Lys 170	Phe	Ser	Phe	Tyr	Ser 175
Asn	Leu	Val	Ser	Gly	Asp	Gly	Gly	Ala 185	Ile	Asp	Ala	Lys	Ser	Leu	Thr 190
Val	Gln	Gly	Ile	Ser	Lys	Leu	Cys 200	Val	Phe	Gln	Glu	Asn 205	Thr	Ala	Gln
Ala	Asp	Gly	Gly	Ala	Cys 215	Gln	Val	Val	Thr	Ser	Phe 220	Ser	Ala	Met	Ala
Asn 225	Glu	Ala	Pro	Ile	Ala 230	Phe	Val	Ala	Asn	Val 235	Ala	Gly	Val	Arg	Gly 240
Gly	Gly	Ile	Ala	Ala 245	Val	Gln	Asp	Gly	Gln 250	Gln	Gly	Val	Ser	Ser	Ser
Thr	Ser	Thr	Glu	Asp	Pro	Val	Val	Ser 265	Phe	Ser	Arg	Asn 270	Thr	Ala	Val
Glu	Phe	Asp	Gly	Asn	Val	Ala	Arg 280	Val	Gly	Gly	Gly	Ile 285	Tyr	Ser	Tyr
Gly	Asn	Val	Ala	Phe	Leu 295	Asn	Asn	Gly	Lys	Thr 300	Leu	Phe	Leu	Asn	Asn
Val 305	Ala	Ser	Pro	Val	Tyr 310	Ile	Ala	Ala	Lys	Gln 315	Pro	Thr	Ser	Gly	Gln 320
Ala	Ser	Asn	Thr	Ser	Asn 325	Asn	Tyr	Gly	Asp 330	Gly	Gly	Ala	Ile	Phe	Cys 335
Lys	Asn	Gly	Ala	Gln	Ala 340	Gly	Ser	Asn 345	Asn	Ser	Gly	Ser	Val 350	Ser	Phe
Asp	Gly	Glu	Gly	Val	Val 355	Phe	Phe 360	Ser	Ser	Asn 365	Val	Ala 365	Ala	Gly	Lys
Gly	Gly	Ala	Ile	Tyr	Ala 375	Lys	Lys	Leu	Ser	Val 380	Ala	Asn 380	Cys	Gly	Pro
Val 385	Gln	Phe	Leu	Arg	Asn 390	Ile	Ala	Asn	Asp	Gly 395	Gly	Ala	Ile	Tyr	Leu 400
Gly	Glu	Ser	Gly	Glu	Leu 405	Ser	Leu	Ser	Ala 410	Asp	Tyr	Gly	Asp	Ile	Ile
Phe	Asp	Gly	Asn	Leu	Lys 420	Arg	Thr	Ala 425	Lys	Glu	Asn	Ala 430	Ala	Asp	Val
Asn	Gly	Val	Thr	Val	Ser 435	Ser	Gln 440	Ala	Ile	Ser	Met 445	Gly	Ser	Gly	Gly
Lys	Ile	Thr	Thr	Leu	Arg 455	Ala	Lys	Ala	Gly	His 460	Gln	Ile	Leu	Phe	Asn
Asp 465	Pro	Ile	Glu	Met	Ala 470	Asn	Gly	Asn	Asn	Gln 475	Pro	Ala	Gln	Ser	Ser 480
Lys	Leu	Leu	Lys	Ile	Asn 485	Asp	Gly	Glu	Gly	Tyr 490	Thr	Gly	Asp	Ile	Val 495
Phe	Ala	Asn	Gly	Ser	Ser 500	Thr	Leu	Tyr 505	Gln	Asn	Val	Thr	Ile	Glu	Gln
Gly	Arg	Ile	Val	Leu	Arg 515	Glu	Lys 520	Ala	Lys	Leu	Ser	Val 525	Asn	Ser	Leu
Ser	Gln	Thr	Gly	Gly	Ser 535	Leu	Tyr	Met	Glu	Ala 540	Gly	Ser	Thr	Leu	Asp
Phe 545	Val	Thr	Pro	Gln	Pro 550	Pro	Gln	Gln	Pro	Pro 555	Ala	Ala	Asn	Gln	Leu 560
Ile	Thr	Leu	Ser	Asn 565	Leu	His	Leu	Ser	Leu 570	Ser	Ser	Leu	Leu	Ala	Asn
Asn	Ala	Val	Thr	Asn 580	Pro	Pro	Thr	Asn 585	Pro	Pro	Ala	Gln 590	Asp	Ser	His
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<212> PRT
<213> Chlamydia
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<400> 191

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Val	Pro	Ser	Ser	Asp	Pro	His	His	His	His	His	His	Gly	Leu	Ala	Arg
			20					25					30		
Glu	Val	Pro	Ser	Arg	Ile	Phe	Leu	Met	Pro	Asn	Ser	Val	Pro	Asp	Pro
		35					40					45			
Thr	Lys	Glu	Ser	Leu	Ser	Asn	Lys	Ile	Ser	Leu	Thr	Gly	Asp	Thr	His
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Asn	Leu	Thr	Asn	Cys	Tyr	Leu	Asp	Asn	Leu	Arg	Tyr	Ile	Leu	Ala	Ile
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Leu	Gln	Lys	Thr	Pro	Asn	Glu	Gly	Ala	Ala	Val	Thr	Ile	Thr	Asp	Tyr
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Leu	Ser	Phe	Phe	Asp	Thr	Gln	Lys	Glu	Gly	Ile	Tyr	Phe	Ala	Lys	Asn
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Leu	Thr	Pro	Glu	Ser	Gly	Gly	Ala	Ile	Gly	Tyr	Ala	Ser	Pro	Asn	Ser
		115				120						125			
Pro	Thr	Val	Glu	Ile	Arg	Asp	Thr	Ile	Gly	Pro	Val	Ile	Phe	Glu	Asn
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Asn	Thr	Cys	Cys	Arg	Leu	Phe	Thr	Trp	Arg	Asn	Pro	Tyr	Ala	Ala	Asp
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Lys	Ile	Arg	Glu	Gly	Gly	Ala	Ile	His	Ala	Gln	Asn	Leu	Tyr	Ile	Asn
			165						170					175	
His	Asn	His	Asp	Val	Val	Gly	Phe	Met	Lys	Asn	Phe	Ser	Tyr	Val	Gln
		180						185					190		
Gly	Gly	Ala	Ile	Ser	Thr	Ala	Asn	Thr	Phe	Val	Val	Ser	Glu	Asn	Gln
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Ser	Cys	Phe	Leu	Phe	Met	Asp	Asn	Ile	Cys	Ile	Gln	Thr	Asn	Thr	Ala
	210				215						220				
Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Gly	Thr	Ser	Asn	Ser	Phe	Glu	Ser
225				230						235					240
Asn	Asn	Cys	Asp	Leu	Phe	Phe	Ile	Asn	Asn	Ala	Cys	Cys	Ala	Gly	Gly
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Ala	Ile	Phe	Ser	Pro	Ile	Cys	Ser	Leu	Thr	Gly	Asn	Arg	Gly	Asn	Ile
		260						265					270		
Val	Phe	Tyr	Asn	Asn	Arg	Cys	Phe	Lys	Asn	Val	Glu	Thr	Ala	Ser	Ser
	275					280						285			
Glu	Ala	Ser	Asp	Gly	Gly	Ala	Ile	Lys	Val	Thr	Thr	Arg	Leu	Asp	Val
	290				295						300				
Thr	Gly	Asn	Arg	Gly	Arg	Ile	Phe	Phe	Ser	Asp	Asn	Ile	Thr	Lys	Asn
305				310						315					320
Tyr	Gly	Gly	Ala	Ile	Tyr	Ala	Pro	Val	Val	Thr	Leu	Val	Asp	Asn	Gly
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Pro	Thr	Tyr	Phe	Ile	Asn	Asn	Ile	Ala	Asn	Asn	Lys	Gly	Gly	Ala	Ile
		340						345					350		
Tyr	Ile	Asp	Gly	Thr	Ser	Asn	Ser	Lys	Ile	Ser	Ala	Asp	Arg	His	Ala
	355					360						365			
Ile	Ile	Phe	Asn	Glu	Asn	Ile	Val	Thr	Asn	Val	Thr	Asn	Ala	Asn	Gly
	370				375						380				
Thr	Ser	Thr	Ser	Ala	Asn	Pro	Pro	Arg	Arg	Asn	Ala	Ile	Thr	Val	Ala
385				390						395					400
Ser	Ser	Ser	Gly	Glu	Ile	Leu	Leu	Gly	Ala	Gly	Ser	Ser	Gln	Asn	Leu
			405					410					415		
Ile	Phe	Tyr	Asp	Pro	Ile	Glu	Val	Ser	Asn	Ala	Gly	Val	Ser	Val	Ser
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Phe	Asn	Lys	Glu	Ala	Asp	Gln	Thr	Gly	Ser	Val	Val	Phe	Ser	Gly	Ala
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T.D.E. 410 " 2 E F 4 8 6 0

Thr Val Asn Ser Ala Asp Phe His Gln Arg Asn Leu Gln Thr Lys Thr
 450 455 460
 Pro Ala Pro Leu Thr Leu Ser Asn Gly Phe Leu Cys Ile Glu Asp His
 465 470 475 480
 Ala Gln Leu Thr Val Asn Arg Phe Thr Gln Thr Gly Gly Val Val Ser
 485 490 495
 Leu Gly Asn Gly Ala Val Leu Ser Cys Tyr Lys Asn Gly Thr Gly Asp
 500 505 510
 Ser Ala Ser Asn Ala Ser Ile Thr Leu Lys His Ile Gly Leu Asn Leu
 515 520 525
 Ser Ser Ile Leu Lys Ser Gly Ala Glu Ile Pro Leu Leu Trp Val Glu
 530 535 540
 Pro Thr Asn Asn Ser Asn Asn Tyr Thr Ala Asp Thr Ala Ala Thr Phe
 545 550 555 560
 Ser Leu Ser Asp Val Lys Leu Ser Leu Ile Asp Asp Tyr Gly Asn Ser
 565 570 575
 Pro Tyr Glu Ser Thr Asp Leu Thr His Ala Leu Ser Ser Gln Pro Met
 580 585 590
 Leu Ser Ile Ser Glu Ala Ser Asp Asn Gln Leu Gln Ser Glu Asn Ile
 595 600 605
 Asp Phe Ser Gly Leu Asn Val Pro His Tyr Gly Trp Gln Gly Leu Trp
 610 615 620
 Thr Trp Gly Trp Ala Lys Thr Gln Asp Pro Glu Pro Ala Ser Ser Ala
 625 630 635 640
 Thr Ile Thr Asp Pro Gln Lys Ala Asn Arg Phe His Arg Thr Leu Leu
 645 650 655
 Leu Thr Trp Leu Pro Ala Gly Tyr Val Pro Ser Pro Lys His Arg Ser
 660 665 670
 Pro Leu Ile Ala Asn Thr Leu Trp Gly Asn Met Leu Leu Ala Thr Glu
 675 680 685
 Ser Leu Lys Asn Ser Ala Glu Leu Thr Pro Ser Gly His Pro Phe Trp
 690 695 700
 Gly Ile Thr Gly Gly Gly Leu Gly Met Met Val Tyr Gln Asp Pro Arg
 705 710 715 720
 Glu Asn His Pro Gly Phe His Met Arg Ser Ser Gly Tyr Ser Ala Gly
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 Met Ile Ala Gly Gln Thr His Thr Phe Ser Leu Lys Phe Ser Gln Thr
 740 745 750
 Tyr Thr Lys Leu Asn Glu Arg Tyr Ala Lys Asn Asn Val Ser Ser Lys
 755 760 765
 Asn Tyr Ser Cys Gln Gly Glu Met Leu Phe Ser Leu Gln Glu Gly Phe
 770 775 780
 Leu Leu Thr Lys Leu Val Gly Leu Tyr Ser Tyr Gly Asp His Asn Cys
 785 790 795 800
 His His Phe Tyr Thr Gln Gly Glu Asn Leu Thr Ser Gln Gly Thr Phe
 805 810 815
 Arg Ser Gln Thr Met Gly Gly Ala Val Phe Phe Asp Leu Pro Met Lys
 820 825 830
 Pro Phe Gly Ser Thr His Ile Leu Thr Ala Pro Phe Leu Gly Ala Leu
 835 840 845
 Gly Ile Tyr Ser Ser Leu Ser His Phe Thr Glu Val Gly Ala Tyr Pro
 850 855 860
 Arg Ser Phe Ser Thr Lys Thr Pro Leu Ile Asn Val Leu Val Pro Ile
 865 870 875 880
 Gly Val Lys Gly Ser Phe Met Asn Ala Thr His Arg Pro Gln Ala Trp
 885 890 895
 Thr Val Glu Leu Ala Tyr Gln Pro Val Leu Tyr Arg Gln Glu Pro Gly

0584132-042301

Ile	Ala	Thr	Gln	Leu	Leu	Ala	Ser	Lys	Gly	Ile	Trp	Phe	Gly	Ser	Gly
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Ser	Pro	Ser	Ser	Arg	His	Ala	Met	Ser	Tyr	Lys	Ile	Ser	Gln	Gln	Thr
	930					935					940				
Gln	Pro	Leu	Ser	Trp	Leu	Thr	Leu	His	Phe	Gln	Tyr	His	Gly	Phe	Tyr
945					950					955					960
Ser	Ser	Ser	Thr	Phe	Cys	Asn	Tyr	Leu	Asn	Gly	Glu	Ile	Ala	Leu	Arg
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Phe															

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 <211> 848
 <212> PRT
 <213> Chlamydia

<400> 192

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Asn	Ile	Ala	Thr	Arg	Leu	Tyr	Val	Glu	Glu	Thr	Val	Glu	Lys	Val	Glu
	35					40					45				
Glu	Val	Glu	Pro	Ala	Pro	Glu	Gln	Lys	Asp	Asn	Asn	Glu	Leu	Ser	Phe
	50					55				60					
Leu	Gly	Ser	Val	Glu	Gln	Ser	Phe	Ile	Thr	Ala	Ala	Asn	Gln	Ala	Leu
65				70					75					80	
Phe	Ala	Ser	Glu	Asp	Gly	Asp	Leu	Ser	Pro	Glu	Ser	Ser	Ile	Ser	Ser
			85					90					95		
Glu	Glu	Leu	Ala	Lys	Arg	Arg	Glu	Cys	Ala	Gly	Gly	Ala	Ile	Phe	Ala
		100					105						110		
Lys	Arg	Val	Arg	Ile	Val	Asp	Asn	Gln	Glu	Ala	Val	Val	Phe	Ser	Asn
	115					120						125			
Asn	Phe	Ser	Asp	Ile	Tyr	Gly	Gly	Ala	Ile	Phe	Thr	Gly	Ser	Leu	Arg
	130					135					140				
Glu	Glu	Asp	Lys	Leu	Asp	Gly	Gln	Ile	Pro	Glu	Val	Leu	Ile	Ser	Gly
145					150					155					160
Asn	Ala	Gly	Asp	Val	Val	Phe	Ser	Gly	Asn	Ser	Ser	Lys	Arg	Asp	Glu
			165						170					175	
His	Leu	Pro	His	Thr	Gly	Gly	Gly	Ala	Ile	Cys	Thr	Gln	Asn	Leu	Thr
	180							185					190		
Ile	Ser	Gln	Asn	Thr	Gly	Asn	Val	Leu	Phe	Tyr	Asn	Asn	Val	Ala	Cys
	195					200						205			
Ser	Gly	Gly	Ala	Val	Arg	Ile	Glu	Asp	His	Gly	Asn	Val	Leu	Leu	Glu
	210					215					220				
Ala	Phe	Gly	Gly	Asp	Ile	Val	Phe	Lys	Gly	Asn	Ser	Ser	Phe	Arg	Ala
225					230					235					240
Gln	Gly	Ser	Asp	Ala	Ile	Tyr	Phe	Ala	Gly	Lys	Glu	Ser	His	Ile	Thr
			245						250					255	
Ala	Leu	Asn	Ala	Thr	Glu	Gly	His	Ala	Ile	Val	Phe	His	Asp	Ala	Leu
	260							265					270		
Val	Phe	Glu	Asn	Leu	Lys	Glu	Arg	Lys	Ser	Ala	Glu	Val	Leu	Leu	Ile
	275						280					285			
Asn	Ser	Arg	Glu	Asn	Pro	Gly	Tyr	Thr	Gly	Ser	Ile	Arg	Phe	Leu	Glu
	290					295					300				
Ala	Glu	Ser	Lys	Val	Pro	Gln	Cys	Ile	His	Val	Gln	Gln	Gly	Ser	Leu

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305					310					315					320
Glu	Leu	Leu	Asn	Gly	Ala	Thr	Leu	Cys	Ser	Tyr	Gly	Phe	Lys	Gln	Asp
				325					330					335	
Ala	Gly	Ala	Lys	Leu	Val	Leu	Ala	Ala	Gly	Ser	Lys	Leu	Lys	Ile	Leu
			340					345					350		
Asp	Ser	Gly	Thr	Pro	Val	Gln	Gly	His	Ala	Ile	Ser	Lys	Pro	Glu	Ala
		355					360					365			
Glu	Ile	Glu	Ser	Ser	Ser	Glu	Pro	Glu	Gly	Ala	His	Ser	Leu	Trp	Ile
	370					375					380				
Ala	Lys	Asn	Ala	Gln	Thr	Thr	Val	Pro	Met	Val	Asp	Ile	His	Thr	Ile
385				390					395						400
Ser	Val	Asp	Leu	Ala	Ser	Phe	Ser	Ser	Ser	Gln	Gln	Glu	Gly	Thr	Val
			405					410						415	
Glu	Ala	Pro	Gln	Val	Ile	Val	Pro	Gly	Gly	Ser	Tyr	Val	Arg	Ser	Gly
			420					425					430		
Glu	Leu	Asn	Leu	Glu	Leu	Val	Asn	Thr	Thr	Gly	Thr	Gly	Tyr	Glu	Asn
	435					440					445				
His	Ala	Leu	Leu	Lys	Asn	Glu	Ala	Lys	Val	Pro	Leu	Met	Ser	Phe	Val
	450					455					460				
Ala	Ser	Ser	Asp	Glu	Ala	Ser	Ala	Glu	Ile	Ser	Asn	Leu	Ser	Val	Ser
465				470					475						480
Asp	Leu	Gln	Ile	His	Val	Ala	Thr	Pro	Glu	Ile	Glu	Glu	Asp	Thr	Tyr
			485						490					495	
Gly	His	Met	Gly	Asp	Trp	Ser	Glu	Ala	Lys	Ile	Gln	Asp	Gly	Thr	Leu
			500					505					510		
Val	Ile	Asn	Trp	Asn	Pro	Thr	Gly	Tyr	Arg	Leu	Asp	Pro	Gln	Lys	Ala
	515					520					525				
Gly	Ala	Leu	Val	Phe	Asn	Ala	Leu	Trp	Glu	Glu	Gly	Ala	Val	Leu	Ser
	530					535					540				
Ala	Leu	Lys	Asn	Ala	Arg	Phe	Ala	His	Asn	Leu	Thr	Ala	Gln	Arg	Met
545				550					555						560
Glu	Phe	Asp	Tyr	Ser	Thr	Asn	Val	Trp	Gly	Phe	Ala	Phe	Gly	Gly	Phe
			565						570					575	
Arg	Thr	Leu	Ser	Ala	Glu	Asn	Leu	Val	Ala	Ile	Asp	Gly	Tyr	Lys	Gly
			580					585					590		
Ala	Tyr	Gly	Gly	Ala	Ser	Ala	Gly	Val	Asp	Ile	Gln	Leu	Met	Glu	Asp
		595					600					605			
Phe	Val	Leu	Gly	Val	Ser	Gly	Ala	Ala	Phe	Leu	Gly	Lys	Met	Asp	Ser
	610					615					620				
Gln	Lys	Phe	Asp	Ala	Glu	Val	Ser	Arg	Lys	Gly	Val	Val	Gly	Ser	Val
625				630					635						640
Tyr	Thr	Gly	Phe	Leu	Ala	Gly	Ser	Trp	Phe	Phe	Lys	Gly	Gln	Tyr	Ser
			645						650					655	
Leu	Gly	Glu	Thr	Gln	Asn	Asp	Met	Lys	Thr	Arg	Tyr	Gly	Val	Leu	Gly
			660				665						670		
Glu	Ser	Ser	Ala	Ser	Trp	Thr	Ser	Arg	Gly	Val	Leu	Ala	Asp	Ala	Leu
	675						680					685			
Val	Glu	Tyr	Arg	Ser	Leu	Val	Gly	Pro	Val	Arg	Pro	Thr	Phe	Tyr	Ala
	690					695					700				
Leu	His	Phe	Asn	Pro	Tyr	Val	Glu	Val	Ser	Tyr	Ala	Ser	Met	Lys	Phe
705				710					715						720
Pro	Gly	Phe	Thr	Glu	Gln	Gly	Arg	Glu	Ala	Arg	Ser	Phe	Glu	Asp	Ala
			725						730					735	
Ser	Leu	Thr	Asn	Ile	Thr	Ile	Pro	Leu	Gly	Met	Lys	Phe	Glu	Leu	Ala
			740					745					750		
Phe	Ile	Lys	Gly	Gln	Phe	Ser	Glu	Val	Asn	Ser	Leu	Gly	Ile	Ser	Tyr
		755					760					765			

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Ala Trp Glu Ala Tyr Arg Lys Val Glu Gly Gly Ala Val Gln Leu Leu
 770 775 780
 Glu Ala Gly Phe Asp Trp Glu Gly Ala Pro Met Asp Leu Pro Arg Gln
 785 790 795 800
 Glu Leu Arg Val Ala Leu Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe
 805 810 815
 Ser Thr Val Leu Gly Leu Thr Ala Phe Cys Gly Gly Phe Thr Ser Thr
 820 825 830
 Asp Ser Lys Leu Gly Tyr Glu Ala Asn Thr Gly Leu Arg Leu Ile Phe
 835 840 845

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<211> 778

<212> PRT

<213> Chlamydia

<400> 193

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 Val Leu Leu Leu Asp Gln Ile Arg Asp Leu Phe Val Gly Ser Lys Asp
 35 40 45
 Ser Gln Ala Glu Gly Gln Tyr Arg Leu Ile Val Gly Asp Pro Ser Ser
 50 55 60
 Phe Gln Glu Lys Asp Ala Asp Thr Leu Pro Gly Lys Val Glu Gln Ser
 65 70 75 80
 Thr Leu Phe Ser Val Thr Asn Pro Val Val Phe Gln Gly Val Asp Gln
 85 90 95
 Gln Asp Gln Val Ser Ser Gln Gly Leu Ile Cys Ser Phe Thr Ser Ser
 100 105 110
 Asn Leu Asp Ser Pro Arg Asp Gly Glu Ser Phe Leu Gly Ile Ala Phe
 115 120 125
 Val Gly Asp Ser Ser Lys Ala Gly Ile Thr Leu Thr Asp Val Lys Ala
 130 135 140
 Ser Leu Ser Gly Ala Ala Leu Tyr Ser Thr Glu Asp Leu Ile Phe Glu
 145 150 155 160
 Lys Ile Lys Gly Gly Leu Glu Phe Ala Ser Cys Ser Ser Leu Glu Gln
 165 170 175
 Gly Gly Ala Cys Ala Ala Gln Ser Ile Leu Ile His Asp Cys Gln Gly
 180 185 190
 Leu Gln Val Lys His Cys Thr Thr Ala Val Asn Ala Glu Gly Ser Ser
 195 200 205
 Ala Asn Asp His Leu Gly Phe Gly Gly Gly Ala Phe Phe Val Thr Gly
 210 215 220
 Ser Leu Ser Gly Glu Lys Ser Leu Tyr Met Pro Ala Gly Asp Met Val
 225 230 235 240
 Val Ala Asn Cys Asp Gly Ala Ile Ser Phe Glu Gly Asn Ser Ala Asn
 245 250 255
 Phe Ala Asn Gly Gly Ala Ile Ala Ala Ser Gly Lys Val Leu Phe Val
 260 265 270
 Ala Asn Asp Lys Lys Thr Ser Phe Ile Glu Asn Arg Ala Leu Ser Gly
 275 280 285
 Gly Ala Ile Ala Ala Ser Ser Asp Ile Ala Phe Gln Asn Cys Ala Glu
 290 295 300
 Leu Val Phe Lys Gly Asn Cys Ala Ile Gly Thr Glu Asp Lys Gly Ser
 305 310 315 320

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Leu Gly Gly Gly Ala Ile Ser Ser Leu Gly Thr Val Leu Leu Gln Gly
 325 330 335
 Asn His Gly Ile Thr Cys Asp Lys Asn Glu Ser Ala Ser Gln Gly Gly
 340 345 350
 Ala Ile Phe Gly Lys Asn Cys Gln Ile Ser Asp Asn Glu Gly Pro Val
 355 360 365
 Val Phe Arg Asp Ser Thr Ala Cys Leu Gly Gly Gly Ala Ile Ala Ala
 370 375 380
 Gln Glu Ile Val Ser Ile Gln Asn Asn Gln Ala Gly Ile Ser Phe Glu
 385 390 395 400
 Gly Gly Lys Ala Ser Phe Gly Gly Gly Ile Ala Cys Gly Ser Phe Ser
 405 410 415
 Ser Ala Gly Gly Ala Ser Val Leu Gly Thr Ile Asp Ile Ser Lys Asn
 420 425 430
 Leu Gly Ala Ile Ser Phe Ser Arg Thr Leu Cys Thr Thr Ser Asp Leu
 435 440 445
 Gly Gln Met Glu Tyr Gln Gly Gly Ala Leu Phe Gly Glu Asn Ile
 450 455 460
 Ser Leu Ser Glu Asn Ala Gly Val Leu Thr Phe Lys Asp Asn Ile Val
 465 470 475 480
 Lys Thr Phe Ala Ser Asn Gly Lys Ile Leu Gly Gly Gly Ala Ile Leu
 485 490 495
 Ala Thr Gly Lys Val Glu Ile Thr Asn Asn Ser Gly Gly Ile Ser Phe
 500 505 510
 Thr Gly Asn Ala Arg Ala Pro Gln Ala Leu Pro Thr Gln Glu Glu Phe
 515 520 525
 Pro Leu Phe Ser Lys Lys Glu Gly Arg Pro Leu Ser Ser Gly Tyr Ser
 530 535 540
 Gly Gly Gly Ala Ile Leu Gly Arg Glu Val Ala Ile Leu His Asn Ala
 545 550 555 560
 Ala Val Val Phe Glu Gln Asn Arg Leu Gln Cys Ser Glu Glu Glu Ala
 565 570 575
 Thr Leu Leu Gly Cys Cys Gly Gly Gly Ala Val His Gly Met Asp Ser
 580 585 590
 Thr Ser Ile Val Gly Asn Ser Ser Val Arg Phe Gly Asn Asn Tyr Ala
 595 600 605
 Met Gly Gln Gly Val Ser Gly Gly Ala Leu Leu Ser Lys Thr Val Gln
 610 615 620
 Leu Ala Gly Asn Gly Ser Val Asp Phe Ser Arg Asn Ile Ala Ser Leu
 625 630 635 640
 Gly Gly Gly Ala Leu Gln Ala Ser Glu Gly Asn Cys Glu Leu Val Asp
 645 650 655
 Asn Gly Tyr Val Leu Phe Arg Asp Asn Arg Gly Arg Val Tyr Gly Gly
 660 665 670
 Ala Ile Ser Cys Leu Arg Gly Asp Val Val Ile Ser Gly Asn Lys Gly
 675 680 685
 Arg Val Glu Phe Lys Asp Asn Ile Ala Thr Arg Leu Tyr Val Glu Glu
 690 695 700
 Thr Val Glu Lys Val Glu Glu Val Glu Pro Ala Pro Glu Gln Lys Asp
 705 710 715 720
 Asn Asn Glu Leu Ser Phe Leu Gly Ser Val Glu Gln Ser Phe Ile Thr
 725 730 735
 Ala Ala Asn Gln Ala Leu Phe Ala Ser Glu Asp Gly Asp Leu Ser Pro
 740 745 750
 Glu Ser Ser Ile Ser Ser Glu Glu Leu Ala Lys Arg Arg Glu Cys Ala
 755 760 765
 Gly Gly Ala Asp Ser Ser Arg Ser Gly Cys

770

775

<210> 194
 <211> 948
 <212> PRT
 <213> Chlamydia

<400> 194

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			20					25					30		
Glu	Gly	Ser	Ser	Ser	Lys	Ser	Asn	Val	Leu	Gly	Gly	Ala	Val	Tyr	Ala
		35					40					45			
Lys	Thr	Leu	Phe	Asn	Leu	Asp	Ser	Gly	Ser	Ser	Arg	Arg	Thr	Val	Thr
	50					55					60				
Phe	Ser	Gly	Asn	Thr	Val	Ser	Ser	Gln	Ser	Thr	Thr	Gly	Gln	Val	Ala
65					70					75					80
Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr	Ile	Ala	Thr	Pro	Val	Val
				85					90					95	
Phe	Ser	Lys	Asn	Ser	Ala	Thr	Asn	Asn	Ala	Asn	Asn	Ala	Thr	Asp	Thr
			100					105					110		
Gln	Arg	Lys	Asp	Thr	Phe	Gly	Gly	Ala	Ile	Gly	Ala	Thr	Ser	Ala	Val
		115					120					125			
Ser	Leu	Ser	Gly	Gly	Ala	His	Phe	Leu	Glu	Asn	Val	Ala	Asp	Leu	Gly
	130					135					140				
Ser	Ala	Ile	Gly	Leu	Val	Pro	Asp	Thr	Gln	Asn	Thr	Glu	Thr	Val	Lys
145					150					155					160
Leu	Glu	Ser	Gly	Ser	Tyr	Tyr	Phe	Glu	Lys	Asn	Lys	Ala	Leu	Lys	Arg
				165					170					175	
Ala	Thr	Ile	Tyr	Ala	Pro	Val	Val	Ser	Ile	Lys	Ala	Tyr	Thr	Ala	Thr
			180					185					190		
Phe	Asn	Gln	Asn	Arg	Ser	Leu	Glu	Gly	Ser	Ala	Ile	Tyr	Phe	Thr	
	195						200				205				
Lys	Glu	Ala	Ser	Ile	Glu	Ser	Leu	Gly	Ser	Val	Leu	Phe	Thr	Gly	Asn
	210					215					220				
Leu	Val	Thr	Pro	Thr	Leu	Ser	Thr	Thr	Thr	Glu	Gly	Thr	Pro	Ala	Thr
225					230					235					240
Thr	Ser	Gly	Asp	Val	Thr	Lys	Tyr	Gly	Ala	Ala	Ile	Phe	Gly	Gln	Ile
				245					250					255	
Ala	Ser	Ser	Asn	Gly	Ser	Gln	Thr	Asp	Asn	Leu	Pro	Leu	Lys	Leu	Ile
			260					265					270		
Ala	Ser	Gly	Gly	Asn	Ile	Cys	Phe	Arg	Asn	Asn	Glu	Tyr	Arg	Pro	Thr
		275					280					285			
Ser	Ser	Asp	Thr	Gly	Thr	Ser	Thr	Phe	Cys	Ser	Ile	Ala	Gly	Asp	Val
	290					295					300				
Lys	Leu	Thr	Met	Gln	Ala	Lys	Gly	Lys	Thr	Ile	Ser	Phe	Phe	Asp	
305					310					315					320
Ala	Ile	Arg	Thr	Ser	Thr	Lys	Lys	Thr	Gly	Thr	Gln	Ala	Thr	Ala	Tyr
				325					330					335	
Asp	Thr	Leu	Asp	Ile	Asn	Lys	Ser	Glu	Asp	Ser	Glu	Thr	Val	Asn	Ser
			340					345					350		
Ala	Phe	Thr	Gly	Thr	Ile	Leu	Phe	Ser	Ser	Glu	Leu	His	Glu	Asn	Lys
		355					360					365			
Ser	Tyr	Ile	Pro	Gln	Asn	Val	Leu	His	Ser	Gly	Ser	Leu	Val	Leu	
370						375				380					
Lys	Pro	Asn	Thr	Glu	Leu	His	Val	Ile	Ser	Phe	Glu	Gln	Lys	Glu	Gly

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385					390					395					400
Ser	Ser	Leu	Val	Met 405	Thr	Pro	Gly	Ser	Val 410	Leu	Ser	Asn	Gln	Thr 415	Val
Ala	Asp	Gly	Ala 420	Leu	Val	Ile	Asn	Asn 425	Met	Thr	Ile	Asp	Leu 430	Ser	Ser
Val	Glu	Lys 435	Asn	Gly	Ile	Ala	Glu 440	Gly	Asn	Ile	Phe	Thr 445	Pro	Pro	Glu
Leu	Arg 450	Ile	Ile	Asp	Thr	Thr 455	Thr	Ser	Gly	Ser	Gly 460	Gly	Thr	Pro	Ser
Thr 465	Asp	Ser	Glu	Ser	Asn 470	Gln	Asn	Ser	Asp	Asp 475	Thr	Lys	Glu	Gln	Asn 480
Asn	Asn	Asp	Ala 485	Ser	Asn	Gln	Gly	Glu	Ser 490	Ala	Asn	Gly	Ser	Ser 495	Ser
Pro	Ala	Val	Ala 500	Ala	Ala	His	Thr	Ser 505	Arg	Thr	Arg	Asn	Phe 510	Ala	Ala
Ala	Ala	Thr 515	Ala	Thr	Pro	Thr	Thr 520	Thr	Pro	Thr	Ala	Thr 525	Thr	Thr	Thr
Ser	Asn 530	Gln	Val	Ile	Leu	Gly 535	Gly	Glu	Ile	Lys	Leu 540	Ile	Asp	Pro	Asn
Gly 545	Thr	Phe	Phe	Gln	Asn 550	Pro	Ala	Leu	Arg	Ser 555	Asp	Gln	Gln	Ile	Ser 560
Leu	Leu	Val	Leu	Pro 565	Thr	Asp	Ser	Ser	Lys 570	Met	Gln	Ala	Gln	Lys 575	Ile
Val	Leu	Thr	Gly 580	Asp	Ile	Ala	Pro	Gln 585	Lys	Gly	Tyr	Thr	Gly 590	Thr	Leu
Thr	Leu	Asp 595	Pro	Asp	Gln	Leu	Gln 600	Asn	Gly	Thr	Ile	Ser 605	Ala	Leu	Trp
Lys	Phe 610	Asp	Ser	Tyr	Arg	Gln 615	Trp	Ala	Tyr	Val	Pro 620	Arg	Asp	Asn	His
Phe 625	Tyr	Ala	Asn	Ser	Ile 630	Leu	Gly	Ser	Gln	Met 635	Ser	Met	Val	Thr	Val 640
Lys	Gln	Gly	Leu	Leu 645	Asn	Asp	Lys	Met	Asn 650	Leu	Ala	Arg	Phe	Asp 655	Glu
Val	Ser	Tyr	Asn 660	Asn	Leu	Trp	Ile	Ser 665	Gly	Leu	Gly	Thr	Met 670	Leu	Ser
Gln	Val	Gly 675	Thr	Pro	Thr	Ser	Glu 680	Glu	Phe	Thr	Tyr	Tyr 685	Ser	Arg	Gly
Ala	Ser 690	Val	Ala	Leu	Asp	Ala 695	Lys	Pro	Ala	His	Asp 700	Val	Ile	Val	Gly
Ala 705	Ala	Phe	Ser	Lys	Met 710	Ile	Gly	Lys	Thr	Lys 715	Ser	Leu	Lys	Arg	Glu 720
Asn	Asn	Tyr	Thr	His 725	Lys	Gly	Ser	Glu	Tyr 730	Ser	Tyr	Gln	Ala	Ser 735	Val
Tyr	Gly	Gly	Lys 740	Pro	Phe	His	Phe	Val 745	Ile	Asn	Lys	Lys	Thr 750	Glu	Lys
Ser	Leu 755	Pro	Leu	Leu	Leu	Gln	Gly 760	Val	Ile	Ser	Tyr	Gly 765	Tyr	Ile	Lys
His	Asp 770	Thr	Val	Thr	His	Tyr 775	Pro	Thr	Ile	Arg	Glu 780	Arg	Asn	Gln	Gly
Glu 785	Trp	Glu	Asp	Leu	Gly 790	Trp	Leu	Thr	Ala	Leu 795	Arg	Val	Ser	Ser	Val 800
Leu	Arg	Thr	Pro	Ala 805	Gln	Gly	Asp	Thr	Lys 810	Arg	Ile	Thr	Val	Tyr 815	Gly
Glu	Leu	Glu	Tyr 820	Ser	Ser	Ile	Arg	Gln 825	Lys	Gln	Phe	Thr	Glu 830	Thr	Glu
Tyr	Asp	Pro 835	Arg	Tyr	Phe	Asp	Asn 840	Cys	Thr	Tyr	Arg	Asn 845	Leu	Ala	Ile

Ser Glu Thr Lys Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro
 290 295 300
 Ser Pro Asp Asp Val Leu Gly Lys Gly Gly Gly Ile Tyr Thr Glu Lys
 305 310 315 320
 Ser Leu Thr Ile Thr Gly Ile Thr Gly Thr Ile Asp Phe Val Ser Asn
 325 330 335
 Ile Ala Thr Asp Ser Gly Ala Gly Val Phe Thr Lys Glu Asn Leu Ser
 340 345 350
 Cys Thr Asn Thr Asn Ser Leu Gln Phe Leu Lys Asn Ser Ala Gly Gln
 355 360 365
 His Gly Gly Gly Ala Tyr Val Thr Gln Thr Met Ser Val Thr Asn Thr
 370 375 380
 Thr Ser Glu Ser Ile Thr Thr Pro Pro Leu Val Gly Glu Val Ile Phe
 385 390 395 400
 Ser Glu Asn Thr Ala Lys Gly His Gly Gly Gly Ile Cys Thr Asn Lys
 405 410 415
 Leu Ser Leu Ser Asn Leu Lys Thr Val Thr Leu Thr Lys Asn Ser Ala
 420 425 430
 Lys Glu Ser Gly Gly Ala Ile Phe Thr Asp Leu Ala Ser Ile Pro Thr
 435 440 445
 Thr Asp Thr Pro Glu Ser Ser Thr Pro Ser Ser Ser Ser Pro Ala Ser
 450 455 460
 Thr Pro Glu Val Val Ala Ser Ala Lys Ile Asn Arg Phe Phe Ala Ser
 465 470 475 480
 Thr Ala Glu Pro Ala Ala Pro Ser Leu Thr Glu Ala Glu Ser Asp Gln
 485 490 495
 Thr Asp Gln Thr Glu Thr Ser Asp Thr Asn Ser Asp Ile Asp Val Ser
 500 505 510
 Ile Glu Asn Ile Leu Asn Val Ala Ile Asn Gln Asn Thr Ser Ala Lys
 515 520 525
 Lys Gly Gly Ala Ile Tyr Gly Lys Lys Ala Lys Leu Ser Arg Ile Asn
 530 535 540
 Asn Leu Glu Leu Ser Gly Asn Ser Ser Gln Asp Val Gly Gly Gly Leu
 545 550 555 560
 Cys Leu Thr Glu Ser Val Glu Phe Asp Ala Ile Gly Ser Leu Leu Ser
 565 570 575
 His Tyr Asn Ser Ala Ala Lys Glu Gly Gly Val Ile His Ser Lys Thr
 580 585 590
 Val Thr Leu Ser Asn Leu Lys Ser Thr Phe Thr Phe Ala Asp Asn Thr
 595 600 605
 Val Lys Ala Ile Val Glu Ser Thr Pro Glu Ala Pro Glu Glu Ile Pro
 610 615 620
 Pro Val Glu Gly Glu Glu Ser Thr Ala Thr Glu Asn Pro Asn Ser Asn
 625 630 635 640
 Thr Glu Gly Ser Ser Ala Asn Thr Asn Leu Glu Gly Ser Gln Gly Asp
 645 650 655
 Thr Ala Asp Thr Gly Thr Gly Val Val Asn Asn Glu Ser Gln Asp Thr
 660 665 670
 Ser Asp Thr Gly Asn Ala Glu Ser Gly Glu Gln Leu Gln Asp Ser Thr
 675 680 685
 Gln Ser Asn Glu Glu Asn Thr Leu Pro Asn Ser Ser Ile Asp Gln Ser
 690 695 700
 Asn Glu Asn Thr Asp Glu Ser Ser Asp Ser His Thr Glu Glu Ile Thr
 705 710 715 720
 Asp Glu Ser Val Ser Ser Ser Lys Ser Gly Ser Ser Thr Pro Gln
 725 730 735
 Asp Gly Gly Ala Ala Ser Ser Gly Ala Pro Ser Gly Asp Gln Ser Ile

			740					745					750				
Ser	Ala	Asn	Ala	Cys	Leu	Ala	Lys	Ser	Tyr	Ala	Ala	Ser	Thr	Asp	Ser		
		755					760					765					
Ser	Pro	Val	Ser	Asn	Ser	Ser	Gly	Ser	Asp	Val	Thr	Ala	Ser	Ser	Asp		
	770					775					780						
Asn	Pro	Asp	Ser	Ser	Ser	Ser	Gly	Asp	Ser	Ala	Gly	Asp	Ser	Glu	Gly		
785					790					795					800		
Pro	Thr	Glu	Pro	Glu	Ala	Gly	Ser	Thr	Thr	Glu	Thr	Pro	Thr	Leu	Ile		
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Gly	Gly	Gly	Ala	Ile													
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<211> 525

<212> PRT

<213> Chlamydia

<400> 196

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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala		
		20					25					30					
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala		
	35					40					45						
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val		
	50				55					60							
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr		
65				70				75						80			
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr		
				85				90						95			
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	Pro	Gly	Asp	Val	Ile	Ser			
			100				105					110					
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr			
	115					120					125						
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Pro	Leu	Val	Pro	Arg	Gly	Ser		
	130					135				140							
Pro	Leu	Pro	Val	Gly	Asn	Pro	Ala	Glu	Pro	Ser	Leu	Leu	Ile	Asp	Gly		
145				150					155					160			
Thr	Met	Trp	Glu	Gly	Ala	Ser	Gly	Asp	Pro	Cys	Asp	Pro	Cys	Ala	Thr		
			165					170						175			
Trp	Cys	Asp	Ala	Ile	Ser	Ile	Arg	Ala	Gly	Tyr	Tyr	Gly	Asp	Tyr	Val		
	180						185						190				
Phe	Asp	Arg	Val	Leu	Lys	Val	Asp	Val	Asn	Lys	Thr	Phe	Ser	Gly	Met		
	195					200						205					
Ala	Ala	Thr	Pro	Thr	Gln	Ala	Ile	Gly	Asn	Ala	Ser	Asn	Thr	Asn	Gln		
	210				215						220						
Pro	Glu	Ala	Asn	Gly	Arg	Pro	Asn	Ile	Ala	Tyr	Gly	Arg	His	Met	Gln		
225				230					235					240			
Asp	Ala	Glu	Trp	Phe	Ser	Asn	Ala	Ala	Phe	Leu	Ala	Leu	Asn	Ile	Trp		
			245					250					255				
Asp	Arg	Phe	Asp	Ile	Phe	Cys	Thr	Leu	Gly	Ala	Ser	Asn	Gly	Tyr	Phe		
	260						265						270				
Lys	Ala	Ser	Ser	Ala	Ala	Phe	Asn	Leu	Val	Gly	Leu	Ile	Gly	Phe	Ser		
	275					280						285					
Ala	Ala	Ser	Ser	Ile	Ser	Thr	Asp	Leu	Pro	Met	Gln	Leu	Pro	Asn	Val		
	290				295				300								
Gly	Ile	Thr	Gln	Gly	Val	Val	Glu	Phe	Tyr	Thr	Asp	Thr	Ser	Phe	Ser		

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<211> 43
<212> DNA
<213> Chlamydia
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43

34

6

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<210> 200
<211> 34
<212> DNA
<213> Chlamydia
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<400> 200	
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<210> 201	
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<212> DNA	
<213> Chlamydia	
<400> 201	
cagagctagc ttaaaagatc aatcgcaatc cagtattc	38
<210> 202	
<211> 5	
<212> DNA	
<213> Chlamydia	
<400> 202	
caatc	5
<210> 203	
<211> 31	
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<213> Chlamydia	
<400> 203	
tgcaatcatg aaaaaagcgt ttttcttttt c	31
<210> 204	
<211> 31	
<212> DNA	
<213> Chlamydia	
<400> 204	
cagaacgcgt ctagaatcgc agagcaattt c	31
<210> 205	
<211> 30	
<212> DNA	
<213> Chlamydia	
<400> 205	
gtgcaatcat gattcctcaa ggaatttacg	30
<210> 206	
<211> 31	
<212> DNA	
<213> Chlamydia	
<400> 206	
cagaacgcgt ttagaaccgg actttacttc c	31
<210> 207	
<211> 50	
<212> DNA	
<213> Chlamydia	
<400> 207	


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<210> 208
<211> 40
<212> DNA
<213> Chlamydia
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<210> 209
<211> 55
<212> DNA
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<212> DNA
<213> Chlamydia
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<211> 36
<212> DNA
<213> Chlamydia
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<210> 212
<211> 35
<212> DNA
<213> Chlamydia
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<210>	213
<211>	51
<212>	DNA
<213>	Chlamydia

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<210> 214
<211> 38
<212> DNA
<213> Chlamydia
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<400> 214
cagagggtact taaaagatca atcgcaatcc agtatttcg 38

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<210> 221
<211> 24
<212> PRT
<213> Chlamydia
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<400> 221
 Met Ala Ser Met Thr Gly Gly Gln Gln Asn Gly Arg Asp Ser Ser Leu
 1 5 10 15
 Val Pro His His His His His His
 20

<210> 222
 <211> 46
 <212> DNA
 <213> Chlamydia

<400> 222
 cagagctagc catcaccatc accatcacct ctttggccag gatccc 46

<210> 223
 <211> 30
 <212> DNA
 <213> Chlamydia

<400> 223
 cagaactagt ctagaacctg taagtgggcc 30

<210> 224
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 224
 Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro Val Asn Ile
 1 5 10 15
 Ser Thr Asp Leu
 20

<210> 225
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 225
 Lys Asn Ser Ala Phe Met His Pro Val Asn Ile Ser Thr Asp Leu Ala
 1 5 10 15
 Val Ile Val Gly
 20

<210> 226
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

09341304301

<400> 226

His Pro Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly
 1 5 10 15
 Pro Met Pro Arg
 20

<210> 227

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 227

Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr
 1 5 10 15
 Glu Ile Val Lys
 20

<210> 228

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 228

Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys
 1 5 10 15
 Val Trp Glu Tyr
 20

<210> 229

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 229

Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile
 1 5 10 15
 Lys Lys His Asn
 20

<210> 230

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

TOC-110-227-230

<400> 234

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<210> 235
<211> 22
<212> PRT
<213> Artificial Sequence
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<220>
<223> Made in a lab
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<210> 236
<211> 20
<212> PRT
<213> Artificial Sequence
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<220>
<223> Made in a lab
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<210> 237
<211> 20
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Made in a lab
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<210> 238
<211> 20
<212> PRT
<213> Artificial Sequence
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<220>
<223> Made in a lab
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<400> 238
Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys

<400> 242
Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg
1 5 10 15

Ser Asp Pro Ala
20

<210> 243
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 243
Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala
1 5 10 15
Thr Thr Pro Thr
20

<210> 244
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 244
Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala
1 5 10 15
Asp Gly Lys Leu
20

<210> 245
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 245
Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val
1 5 10 15
Trp Lys Ile Asp
20

<210> 246
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 246
Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg
1 5 10 15
Leu Gly Gln Gly

TOC240 "244" 04360

20

<210> 247
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 247
 Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu
 1 5 10 15
 Lys Ser Lys Ile
 20

<210> 248
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 248
 Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr
 1 5 10 15
 Val Trp Val Lys
 20

<210> 249
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 249
 Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro
 1 5 10 15
 Leu Lys Glu Gly
 20

<210> 250
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 250
 Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10 15
 Cys Cys Phe Thr
 20

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<210> 251
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 251
 Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10 15

<210> 252
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 252
 Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10

<210> 253
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 253
 Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10 15

<210> 254
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 254
 Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala
 1 5 10 15
 Phe Gly Val Leu
 20

<210> 255
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Made in a lab

<400> 255

Leu	Ala	Asp	Pro	Ser	Phe	Lys	Ile	Ser	Glu	Ala	Phe	Gly	Val	Leu	Asn
1				5					10					15	
Pro	Glu	Gly	Ser												
			20												

<210> 256

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 256

Phe	Lys	Ile	Ser	Glu	Ala	Phe	Gly	Val	Leu	Asn	Pro	Glu	Gly	Ser	Leu
1				5					10					15	
Ala	Leu	Arg	Ala												
			20												

<210> 257

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 257

Ala	Phe	Gly	Val	Leu	Asn	Pro	Glu	Gly	Ser	Leu	Ala	Leu	Arg	Ala	Thr
1				5					10					15	
Phe	Leu	Ile	Asp												
			20												

<210> 258

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 258

Asn	Pro	Glu	Gly	Ser	Leu	Ala	Leu	Arg	Ala	Thr	Phe	Leu	Ile	Asp	Lys
1				5					10					15	
His	Gly	Val	Ile												
			20												

<210> 259

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

09341-04301

<400> 259
 Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg
 1 5 10 15
 His Ala Val Ile
 20

<210> 260
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 260
 Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn
 1 5 10 15
 Asp Leu Pro Leu
 20

<210> 261
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 261
 Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly
 1 5 10 15
 Arg Ser Ile Asp
 20

<210> 262
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 262
 Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu
 1 5 10 15
 Glu Leu Arg Ile
 20

<210> 263
 <211> 897
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)...(897)

094133.04301

<223> n = A,T,C or G

<400> 263

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attaaggttg	ccaagtctgc	tgccgaattg	accgcaaata	ttttggaaca	agctggaggc	180
gcgggctctt	ccgcacacat	tacagcttcc	caagtgtcca	aaggattagg	ggatgcgaga	240
actgttgctg	ctttagggaa	tgcctttaac	ggagcgttgc	caggaacagt	tcaaagtgcg	300
caaagcttct	tctctcacat	gaaagctgct	agtcagaaaa	cgcaagaagg	ggatgagggg	360
ctcacagcag	atctttgtgt	gtctcataag	cgcagagcgg	ctgcggtgtg	ctgtagcatc	420
atcggaggaa	ttacctacct	cgcgacattc	ggagctatcc	gtccgattct	gtttgtcaac	480
aaaatgctgg	caaaaccgtt	tctttcttcc	caaactaaag	caaatatggg	atcttctggt	540
agctatatta	tggcggctaa	ccatgcagcg	tctgtggtgg	gtgctggact	cgctatcagt	600
gcgnaaagag	cagattgcga	agcccgtctg	gctcgtattg	cgagagaaga	gtcgttactc	660
gaagtgccgg	gagaggaaaa	tgcttgccgag	aagaaagtcg	ctggagagaa	agccaagacg	720
ttcacgcgca	tcaagtatgc	actcctcact	atgctcgaga	agtttttggg	atgcgttgcc	780
gacgttttca	aattggtgcc	gctgcctatt	acaatgggta	ttcgtgcgat	tgtggctgct	840
ggatgtacgt	tcacttctgc	aattattgga	ttgtgcactt	tctgcgccag	agcataa	897

<210> 264

<211> 298

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> (1)...(298)

<223> Xaa = Any Amino Acid

<400> 264

Met	Ala	Ser	Ile	Cys	Gly	Arg	Leu	Gly	Ser	Gly	Thr	Gly	Asn	Ala	Leu
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Lys	Ala	Phe	Phe	Thr	Gln	Pro	Asn	Asn	Lys	Met	Ala	Arg	Val	Val	Asn
			20					25					30		
Lys	Thr	Lys	Gly	Val	Asp	Lys	Thr	Ile	Lys	Val	Ala	Lys	Ser	Ala	Ala
		35					40					45			
Glu	Leu	Thr	Ala	Asn	Ile	Leu	Glu	Gln	Ala	Gly	Gly	Ala	Gly	Ser	Ser
	50					55				60					
Ala	His	Ile	Thr	Ala	Ser	Gln	Val	Ser	Lys	Gly	Leu	Gly	Asp	Ala	Arg
65					70				75					80	
Thr	Val	Val	Ala	Leu	Gly	Asn	Ala	Phe	Asn	Gly	Ala	Leu	Pro	Gly	Thr
				85					90					95	
Val	Gln	Ser	Ala	Gln	Ser	Phe	Phe	Ser	His	Met	Lys	Ala	Ala	Ser	Gln
			100					105					110		
Lys	Thr	Gln	Glu	Gly	Asp	Glu	Gly	Leu	Thr	Ala	Asp	Leu	Cys	Val	Ser
		115					120					125			
His	Lys	Arg	Arg	Ala	Ala	Ala	Ala	Val	Cys	Ser	Ile	Ile	Gly	Gly	Ile
130					135					140					
Thr	Tyr	Leu	Ala	Thr	Phe	Gly	Ala	Ile	Arg	Pro	Ile	Leu	Phe	Val	Asn
145					150				155						160
Lys	Met	Leu	Ala	Lys	Pro	Phe	Leu	Ser	Ser	Gln	Thr	Lys	Ala	Asn	Met
			165					170						175	
Gly	Ser	Ser	Val	Ser	Tyr	Ile	Met	Ala	Ala	Asn	His	Ala	Ala	Ser	Val
			180					185					190		
Val	Gly	Ala	Gly	Leu	Ala	Ile	Ser	Ala	Xaa	Arg	Ala	Asp	Cys	Glu	Ala
	195					200						205			
Arg	Cys	Ala	Arg	Ile	Ala	Arg	Glu	Glu	Ser	Leu	Leu	Glu	Val	Pro	Gly

210		215		220
Glu Glu Asn Ala Cys	Glu Lys Lys Val Ala Gly	Glu Lys Ala Lys Thr		
225	230	235	240	
Phe Thr Arg Ile Lys Tyr	Ala Leu Leu Thr Met	Leu Glu Lys Phe Leu		
	245	250	255	
Glu Cys Val Ala Asp Val	Phe Lys Leu Val Pro	Leu Pro Ile Thr Met		
	260	265	270	
Gly Ile Arg Ala Ile Val	Ala Ala Gly Cys Thr	Phe Thr Ser Ala Ile		
	275	280	285	
Ile Gly Leu Cys Thr Phe	Cys Ala Arg Ala			
290	295			

<210> 265
 <211> 897
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)...(897)
 <223> n = A,T,C or G

<400> 265

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attaaggttg	ccaagtctgc	tgccgaattg	accgcaaata	ttttggaaca	agctggaggc	180
gcgggctctt	ccgcacacat	tacagcttcc	caagtgtcca	aaggattagg	ggatgcgaga	240
actgttgctg	ctttagggaa	tgcctttaac	ggagcgttgc	caggaacagt	tcaaagtgcg	300
caaagcttct	tctctcacat	gaaagctgct	agtcagaaaa	cgcaagaagg	ggatgagggg	360
ctcacagcag	atctttgtgt	gtctcataag	cgcagagcgg	ctgcggctgt	ctgtagcatc	420
atcggaggaa	ttacctacct	cgcgacattc	ggagctatcc	gtccgattct	gtttgtcaac	480
aaaatgctgg	caaaaccgtt	tctttcttcc	caaactaaag	caaatatggg	atcttctggt	540
agctatatta	tggcggctaa	ccatgcagcg	tctgtggtgg	gtgctggact	cgctatcagt	600
gcgnaaagag	cagattgcga	agcccgtgct	gctcgtattg	cgagagaaga	gtcgttactc	660
gaagtgccgg	gagaggaaaa	tgcttgcgag	aagaaagtcg	ctggagagaa	agccaagacg	720
ttcacgcgca	tcaagtatgc	actcctcact	atgctcgaga	agtttttgga	atgcgttgcc	780
gacgttttca	aattggtgcc	gctgcctatt	acaatgggta	ttcgtgcgat	tgtggctgct	840
ggatgtacgt	tcacttctgc	aattattgga	ttgtgcactt	tctgcgccag	agcataa	897

<210> 266
 <211> 298
 <212> PRT
 <213> Chlamydia

<220>
 <221> VARIANT
 <222> (1)...(298)
 <223> Xaa = Any Amino Acid

<400> 266

Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu	
1 5 10 15	
Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn	
20 25 30	
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala	
35 40 45	
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser	

cttatgttct	ggagaatggt	gcaacaacat	attaatcgaa	ccagctcctc	ctagtaacat	60
agaaaccaag	cccttttgag	aaaaaacctg	tacttcgcat	ccttttagcca	tttggtgaat	120
agctcctaac	aaagagctaa	ttttttcctc	ttccttggtt	ttctgaggcg	ctgtggactc	180
taaatatagc	aagtgtctct	ggaacacctc	atcaacaatc	gcttgtccta	gattaggtat	240
agagactgtc	tctccatcaa	ttaaattggag	tttcaaagta	atatcccctt	ccgtccctcc	300
atcacaagac	tctatgaaa	ctatctgatt	ccatcgagca	gaaatgtatg	gggaaatac	359

<210> 269

<211> 124

<212> DNA

<213> Chlamydia

<400> 269

gatcgaatca	attgagggag	ctcattaaca	agaatagctg	cagtttcttt	gcgttcttct	60
ggaataacaa	gaaataggta	atcggtacca	ttgatagaac	gaacacgaca	aatcgcagaa	120
ggtt						124

<210> 270

<211> 219

<212> DNA

<213> Chlamydia

<400> 270

gatcctgttg	ggcctagtaa	taatacgttg	gatttcccat	aactcacttg	tttatcctgc	60
ataagagcac	ggatacgctt	atagtgggta	tagacggcaa	ccgaaatcgt	ttttttcgcg	120
cgctcttgtc	caatgacata	agagtcgatg	tggcggttga	tttcttttagg	ggttaacact	180
ctcagacttg	ttggagagct	tgtggaagat	gttgcgatc			219

<210> 271

<211> 511

<212> DNA

<213> Chlamydia

<220>

<221> misc_feature

<222> (1)...(511)

<223> n = A,T,C or G

<400> 271

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acaaagaggt	tttggcatag	atggctcctc	cttgtaogtt	caacgatgat	tgggagggat	120
tgttatcgat	agcttggttc	ccagagaact	gacaagtccc	gctacattga	gagaatgtaa	180
cctgttctcc	atagatagct	cctcctacta	cacctgaata	agttggtggt	gctggagatg	240
atggtgcggc	tgctgctggc	gcttgtaggg	aagcagcagc	tgcagcaggt	gctgaagctg	300
ttggtgcgac	tcctgtggat	gaggagtttg	ctttgttggt	cgagaaagag	aagcctgatt	360
tcagattaga	aataattaca	gttttagcat	gtaagcctcc	accttctttc	ccaacaaggt	420
tctctgttac	agataaggag	actagangca	tctagtttta	aagatttttt	acagcagata	480
cctccaccta	tctctgttagc	ggagttctca	g			511

<210> 272

<211> 598

<212> DNA

<213> Chlamydia

<400> 272

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ctctggctca	aactcggata	cctcaaaaac	agttccagtc	acagctaaag	gcggtgggct	120

ttatactgat	aagaatcttt	cgattactaa	catcacagga	attatcgaaa	ttgcaaataa	180
caaagcgaca	gatgttggag	gtggtgctta	cgtaaaagga	acccttactt	gtaaaaactc	240
tcaccgtcta	caatttttga	aaaactcttc	cgataaacia	ggtggaggaa	tctacggaga	300
agacaacatc	accctatcta	atgtgacagg	gaagactcta	ttccaagaga	atactgccaa	360
aaaagagggc	ggtggactct	tcataaaaag	tacagataaa	gctcttacia	tgacaggact	420
ggatagtctc	tgtttaatta	ataacacatc	agaaaaacat	ggtggtggga	gcctttgtta	480
ccaaagaaat	ctctcagact	tacacctctt	gatgtggaaa	caattccagg	aatcacgcct	540
gtacatggtg	aaacagtcac	tactggcaat	aatctacag	gaggtaatgg	tggagggc	598

<210> 273

<211> 126

<212> DNA

<213> Chlamydia

<400> 273

ggatccgaat	tcggcacgag	atgagcctta	tagtttaaca	aaagcttctc	acattccttc	60
gatagctttt	tattagccgt	ttttagcatc	ctaattgagat	ctcctcgttc	gtaacaaata	120
cgagag						126

<210> 274

<211> 264

<212> DNA

<213> Chlamydia

<400> 274

ggatccgaat	tcggcacgag	ctctttttaa	tcttaattac	aaaaagacaa	attaattcaa	60
tttttcaaaa	aagaatttaa	acattaattg	ttgtaaaaaa	acaatattta	ttctaaaata	120
ataaccatag	ttacggggga	atctctttca	tggtttatct	tagagctcat	caacctaggc	180
atagccttaa	aacatttcct	ttgaaagttc	accattcggt	ctccgataag	catcctcaaa	240
ttgctaaagc	tatgtggatt	acgg				264

<210> 275

<211> 359

<212> DNA

<213> Chlamydia

<400> 275

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tttcagctgc	aaattctttt	agataaatat	caaccatttc	ttcagtttca	tatcttggaa	120
ttaaaacttg	ttctcttaaa	ttaattctag	tatttaagta	ttcaacatag	cccattatta	180
attgaattgg	ataattttgc	cttaataatt	cacattcttt	ttcagtaatt	ttaggttcta	240
aaccgtaccg	ctttttttct	aaaattaatg	tttcttcatt	attcatttta	taagccactt	300
tcctttattt	tttgattttg	ttcttctggt	agtaatgctt	caataatagt	taataattt	359

<210> 276

<211> 357

<212> DNA

<213> Chlamydia

<400> 276

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atgggtagta	gtgactctaa	cgttttttat	tattaagacg	atccccggag	atccttttaa	120
tgatgaaaac	ggaaacatcc	tttcgccaga	aacttttagca	ctattaaaga	atcgttacgg	180
gtagataaag	cctttattca	cccagtatct	tatctatttg	aaatgtctgc	taacactaga	240
tttcggggaa	tctcttatct	acaaagatcg	aaatctcagc	attattgctg	ccgctcttcc	300
atcttccgct	attcttggac	ttgaaagctt	gtgtttactc	gtgccgaatt	cggatcc	357

<400>	280						
ggatccgaat	tccggcacgag	cagaggaaaa	aggcgatact	cctcttgaag	atcgtttcac		60
agaagatctt	tccgaagtct	ctggagaaga	ttttcgagga	ttgaaaaatt	cgttcgatga		120
tgattcttct	tctgacgaaa	ttctcgatgc	gctcacaagt	aaattttctg	atcccacaat		180
aaaggatcta	gctcttgatt	atctaattca	aatagctccc	tctgatggga	aacttaagtc		240
cgctctcatt	caggcaaagc	atcaactgat	gagccagaat	cctcaggcga	ttgttggagg		300
acgcaatggt	ctgttagctt	cagaaaacct	tgcttcgaga	gcaaatacat	ctccttcac		360
gcttcgctcc	ttatatattcc	aagtaacctc	atccccctct	aattgcgccta	atttaccatca		420
aattgcttgct	tcttactcgc	catcagaqaa	aaccgcgtgt	atggagtttc	tagtgaatgg		480

catggttagca gattttaaatt cggagggccc ttccattcct cc 522

<210> 281
<211> 577
<212> DNA
<213> Chlamydia

<400> 281
ggatccgaat tcggcacgag atgcttctat tacaattggt ttggatgcgg aaaaagctta 60
ccagcttatt ctgaaaaagt tgggagatca aattcttggt ggaattgctg atactattgt 120
tgatagtaca gtccaagata ttttagacaa aatcacacaa gacccttctc taggtttgtt 180
gaaagctttt aacaactttc caatcactaa taaaattcaa tgcaacgggt tattcactcc 240
caggaacatt gaaactttat taggaggaac tgaaatagga aaattcacag tcacacccaa 300
aagctctggg agcatgttct tagtctcagc agatattatt gcatcaagaa tggaaggcgg 360
cgttgttcta gctttggtac gagaagggtga ttctaagccc tacgcgatta gttatggata 420
ctcatcaggc gttcctaatt tatgtagtct aagaaccaga attattaata caggattgac 480
tccgacaacg tattcattac gtgtaggcgg tttagaaaagc ggtgtggtat gggttaatgc 540
cctttctaatt ggcaatgata ttttaggaat aacaaat 577

<210> 282
<211> 607
<212> DNA
<213> Chlamydia

<400> 282
actmatcttc cccgggctcg agtgccggccg caagcttgct gacggagctc gatacaaaaa 60
tgtgtgcgtg tgaaccgctt cttcaaaaagc ttgtcttaaa agatattgtc tcgcttccgg 120
attagttaca tgtttaaaaa ttgctagaac aatattattc ccaaccaagc tctctgcggt 180
gctgaaaaaa cctaaattca aaagaatgac tcgccgctca tcttcagaaa gacgatccga 240
cttccataat tcgatgtctt tccccatggg gatctctgta gggagccagt tatttgcgca 300
gccattcaaa taatgttccc aagcccattt gtacttaata ggaacaagtt ggttgacatc 360
gacctggttg cagttcacta gacgcttgct atttagatta acgcgcttct gttttccatc 420
taaaatatct gcttgcataa gaaccgttaa ttttattggt aatttatatg attaattact 480
gacatgcttc acacccttct tccaaaagaac agacagggtgc tttcttcgct ctttcaacaa 540
taattcctgc cgaagcagac ttattcttca tccaacgagg ctgaattcct ctcttattaa 600
tatctac 607

<210> 283
<211> 1077
<212> DNA
<213> Chlamydia

<400> 283
ggatccgaat tcggcacgag aagttaacga tgacgatttg ttcctttggt agagaaggag 60
caatcgaaac taaatgtgct agagcatgtg aagactccaa tgcaggaata atcccctcat 120
ttctagtaag caggaaaaaa gctcgtaacg cctcttcacg ggtgggtaat gtataaaagg 180
ctcgtctga ctcatgcatt tcggcatgat ctggcccaac tgaaggataa tctaataccag 240
cggaatgga gtgagtttgt aatacttgct catcgctcat ttgaagaaga tacgaataaa 300
atccgtggaa tactccaggc cgccctggtg caaaacgtgc tgcattgttt cctgaagaaa 360
tgcccagctc tcccccttcc actccaatta attggacttt tggattcggg ataaaatgat 420
ggaaaaatcc aatagcgttg gagccacctc cgatacatgc aatcagaata tcaggatctc 480
ttcctgcaac tgcattgatt tgctctttca cttcagcgct tataacagac tgaaaaaatc 540
gaacgatatc gggataaggc aaaggctcta aggcgatcc taagcaatag tgagtaaatg 600
agtgtgttgt tgcccaatct tgtagagctt gattaactgc atctttgagt ccacaagatc 660
ctttgtttac agaaacgact tcagcaccta aaaagcgcat tttctctaca tttggtttct 720
gtcgttccac atcttttgct cccatgtata ctacacaatc taatcctaga taagcacacg 780
ctgtgtgctg tgctactcca tgttgtcccg cacctgtttc agctacaaca cgtgttttcc 840

caagatatatt	agcaagcaaa	cactgaccaa	gagcattatt	cagtttatgt	gctcctgtat	900
gcaaaaagatc	ttcgcgttta	agaaatactc	tagggccatc	aatagctcga	gcaaaaattct	960
taacttcagt	cagaggagtt	tgtctccccg	catagttttt	caaaatacaa	tctagttcag	1020
ataaaaaact	ttgctgagtt	ttgagaatct	cccattccgc	ttttagattc	tgtatag	1077

<210> 284

<211> 407

<212> DNA

<213> Chlamydia

<400> 284

ggatccgaat	tcggcacgag	aactactgag	caaattgggt	atccaacttc	ctcttttacga	60
aagaaaaaca	gaaggcattc	tccataccaa	gatttggtgc	atcgacaata	aaactccaat	120
ctttggctct	gctaactgga	gcggtgctgg	tatgattaaa	aactttgaag	acctattcat	180
ccttcgcca	attacagaga	cacagcttca	ggcctttatg	gacgtctggt	ctcttctaga	240
aacaaatagc	tcctatctgt	ccccagagag	cgtgcttacg	gcccctactc	cttcaagtag	300
acctactcaa	caagatacag	attctgatga	cgaacaaccg	agtaccagcc	agcaagctat	360
ccgtatgaga	aaataggatt	agggaaacaa	aacgacagca	aaccaca		407

<210> 285

<211> 802

<212> DNA

<213> Chlamydia

<400> 285

ggatccgaat	tcggcacgag	ttagcttaat	gtctttgtca	tctctaccta	catttgcagc	60
taattctaca	ggcacaattg	gaatcgtaa	tttacgtcgc	tgctagaag	agtctgctct	120
tgggaaaaaa	gaatctgctg	aattcgaaaa	gatgaaaaac	caattctcta	acagcatggg	180
gaagatggag	gaagaactgt	cttctatcta	ttccaagctc	caagacgacg	attacatgga	240
aggtctatcc	gagaccgcag	ctgccgaatt	aagaaaaaaa	ttcgaagatc	tatctgcaga	300
atacaacaca	gctcaagggc	agtattacca	aatattaaac	caaagtaatc	tcaagcgcac	360
gcaaaaagatt	atggaagaag	tgaaaaaagc	ttctgaaact	gtgcgtattc	aagaaggctt	420
gtcagtcctt	cttaacgaag	atattgtcct	atctatcgat	agttcggcag	ataaaaccga	480
tgtctgttatt	aaagttcctg	atgattcttt	tcaaaataat	taacatgcga	agctagccga	540
ggagtgccgt	atgtctcaat	ccacttattc	tcttgaaaca	ttagctgatt	ttttgaaagt	600
cgagtttcaa	ggaaatggag	ctactcttct	ttccggagtt	gaagagatcg	aggaagcaaa	660
aacggcacac	atcacattct	tagataatga	aaaatatgct	aaacatttaa	aatcatcgga	720
agctggcgct	atcatcatat	ctcgaacaca	gtttcaaaaa	tatcgagact	tgaataaaaa	780
ctttcttatac	acttctgagt	ct				802

<210> 286

<211> 588

<212> DNA

<213> Chlamydia

<400> 286

ggatccgaat	tcggcacgag	gcaatattta	ctcccaacat	tacggttcca	aataagcgat	60
aaggtcttct	aataaggaag	ttaatgtaag	aggctttttt	attgcttttc	gtaaggtagt	120
attgcaaccg	cacgcgattg	aatgatacgc	aagccatttc	catcatggaa	aagaaccctt	180
ggacaaaaat	acaaaggagg	ttcactccta	accagaaaaa	gggagagtta	gtttccatgg	240
gttttcctta	tatacacccg	tttcacacaa	ttaggagccg	cgtctagtat	ttggaataca	300
aattgtcccc	aagcgaattt	tgttcctggt	tcagggattt	ctcctaattg	ttctgtcagc	360
catccgccta	tggtaacgca	attagctgta	gtaggaagat	caactccaaa	caggtcatag	420
aaatcagaaa	gctcataggt	gcctgcagca	ataacaacat	tcttgtctga	gtgagcgaat	480
tgtttaaaag	atgggcgatt	atgagctacc	tcacagagaa	ctatttttaa	tagatcattt	540
tgggtaatac	atccttctat	agacccatat	tcacaatga	taatctcg		588

<210> 287
 <211> 489
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)...(489)
 <223> n = A,T,C or G

<400> 287
 agtgcctatt gttttgcagg ctttgtctga tgatagcgat accgtacgtg agattgctgt 60
 acaagtagct gttatgtatg gttctagttg cttactgcgc gccgtgggcg atttagcgaa 120
 aaatgattct tctattcaag tacgcatcac tgcttatcgt gctgcagccg tgttggagat 180
 acaagatctt gtgcctcatt tacgagttgt agtccaaaat acacaattag atggaacgga 240
 aagaagagaa gcttggagat ctttatgtgt tcttactcgg cctcatagtgt gtgtattaac 300
 tggcatagat caagctttaa tgacctgtga gatgttaaa gaatatcctg aaaagtgtac 360
 ggaagaacag attcgtacat tattggctgc agatcatcca gaagtgcagg tagctacttt 420
 acagatcatt ctgagaggag gtagagtatt ccggtcatct tctataatgg aatcggttct 480
 cgtgccgnt 489

<210> 288
 <211> 191
 <212> DNA
 <213> Chlamydia

<400> 288
 ggatccgaat tcaggatatg ctggttgggtt atcaataaaa agggttttgc ctttttttaa 60
 gacgactttg tagataacgc taggagctgt agcaataata tcgagatcaa attctctaga 120
 gattctctca aagatgattt ctaagtgcag cagtcctaaa aatccacagc ggaacccaaa 180
 tccgagagag t 191

<210> 289
 <211> 515
 <212> DNA
 <213> Chlamydia

<400> 289
 ggatccgaat tcggcacgag gagcgacgtg aaatagtgga atcttcccggt attottatta 60
 cttctgcgtt gccttacgca aatggtcctt tgcatttttg acatattacc ggtgcttatt 120
 tgcctgcaga tgtttatgcy cgttttcaga gactacaagg caaagagggt ttgtatattt 180
 gtgggttctga tgaatacggg atcgcaatta cccttaatgc agagtgggca ggcatggggt 240
 atcaagaata tgtcgacatg tatcataagc ttcataaaga taccttcaag aaattgggaa 300
 tttctgtaga tttcttttcc agaactacga acgcttatca tctgtctatt gtgcaagatt 360
 tctatcgaaa cttgcaggaa cgcggactgg tagagaatca ggtgaccgaa cagctgtatt 420
 ctgaggaaga aggggaagttt ttagcggacc gttatgttgt aggtacttgt cccaagtgtg 480
 ggtttgatcg agctcgagga gatgagtgct agcag 515

<210> 290
 <211> 522
 <212> DNA
 <213> Chlamydia

<400> 290
 ggatccgaat tcggcacgag ggaggaatgg aagggccctc cgattktama tctgctacca 60
 tgccattcac tagaaactcc ataacagcgg ttttctctga tggcgagtaa gaagcaagca 120
 tttgatgtaa attagcgcaa ttagaggggg atgaggttac ttggaaatat aaggagcgaa 180

gcgatgaagg agatgtatatt gctctggaag caaagggtttc tgaagctaac agaacattgc 240
 gtcctccaac aatcgccctga ggattctggc tcatcagttg atgctttgcc tgaatgagag 300
 cggacttaag tttcccatca gagggagcta tttgaattag ataatcaaga gctagatcct 360
 ttattgtggg atcagaaaaat ttacttgtga gcgcacgcag aatttcgtca gaagaagaat 420
 catcatcgaa cgaatTTTTT aatcctcgaa aatcttctcc agagacttcg gaaagatcct 480
 ctgtgaaacg atcttcaaga ggagtatcgc ctttttccyc tg 522

<210> 291

<211> 1002

<212> DNA

<213> Chlamydia

<400> 291

atggcgacta acgcaattag atcggcagga agtgcagcaa gtaagatgct gctgccagtt 60
 gccaaagaac cagcggctgt cagctccttt gctcagaaag ggatttattg tattcaacaa 120
 ttttttacaa accctgggaa taagttagca aagttttagg gggcaacaaa aagtttagat 180
 aaatgcttta agctaagtaa ggcgggtttct gactgtgtcg taggatcgct ggaagaggcg 240
 ggatgcacag gggacgcatt gacctccgcg agaaacgccc aggggatggt aaaaacaact 300
 cgagaagttg ttgccttagc taatgtgctc aatggagctg ttccatctat cgttaactcg 360
 actcagaggt gttaccaata cacacgtcaa gccttcgagt taggaagcaa gacaaaagaa 420
 agaaaaacgc ctggggagta tagtaaaatg ctattaactc gaggtgatta cctattggca 480
 gcttccaggg aagcttgtac ggcagtcggt gcaacgactt actcagcgac attcgggtgtt 540
 ttacgtccgt taatgttaat caataaactc acagcaaaac cattcttaga caaagcgact 600
 gtaggcaatt ttggcacggc tgttgctgga attatgacca ttaatcatat ggcaggagtt 660
 gctggtgctg ttggcggaat cgcattagaa caaaagctgt tcaaactgac gaaggaatcc 720
 ctatacaatg agagatgtgc cttagaaaac caacaatctc agttgagtg ggcagtgatt 780
 ctaagcgcgg aaagggcatt acgtaaagaa cacgttgcta ctctaaaaag aaatgtttta 840
 actcttcttg aaaaagcttt agagttggta gtggatggag tcaaactcat tcctttaccg 900
 attacagtg cttgctccgc tgcaatttct ggagccttga cggcagcatc cgcaggaatt 960
 ggcttatata gcatatggca gaaaacaaag tctggcaaat aa 1002

<210> 292

<211> 333

<212> PRT

<213> Chlamydia

<400> 292

Met Ala Thr Asn Ala Ile Arg Ser Ala Gly Ser Ala Ala Ser Lys Met
 1 5 10 15
 Leu Leu Pro Val Ala Lys Glu Pro Ala Ala Val Ser Ser Phe Ala Gln
 20 25 30
 Lys Gly Ile Tyr Cys Ile Gln Gln Phe Phe Thr Asn Pro Gly Asn Lys
 35 40 45
 Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe Lys
 50 55 60
 Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu Ala
 65 70 75 80
 Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly Met
 85 90 95
 Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn Gly
 100 105 110
 Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr Thr
 115 120 125
 Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr Pro
 130 135 140
 Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu Ala
 145 150 155 160

<210> 293
<211> 7
<212> DNA
<213> Chlamydia

7

<400> 294

Thr	Met	Gly	Ser	Leu	Val	Gly	Arg	Gln	Ala	Pro	Asp	Phe	Ser	Gly	Lys
				5					10					15	
Ala	Val	Val	Cys	Gly	Glu	Glu	Lys	Glu	Ile	Ser	Leu	Ala	Asp	Phe	Arg
			20					25					30		
Gly	Lys	Tyr	Val	Val	Leu	Phe	Phe	Tyr	Pro	Lys	Asp	Phe	Thr	Tyr	Val
		35					40					45			
Cys	Pro	Thr	Glu	Leu	His	Ala	Phe	Gln	Asp	Arg	Leu	Val	Asp	Phe	Glu
	50					55					60				
Glu	His	Gly	Ala	Val	Val	Leu	Gly	Cys	Ser	Val	Asp	Asp	Ile	Glu	Thr
65					70					75					80
His	Ser	Arg	Trp	Leu	Thr	Val	Ala	Arg	Asp	Ala	Gly	Gly	Ile	Glu	Gly
				85					90					95	
Thr	Glu	Tyr	Pro	Leu	Leu	Ala	Asp	Pro	Ser	Phe	Lys	Ile	Ser	Glu	Ala
			100					105					110		

Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe
 115 120 125
 Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu
 130 135 140
 Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu
 145 150 155 160
 Ile Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser
 165 170 175
 Gly Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe
 180 185 190
 Gln Thr Met Asp
 195

<210> 295
 <211> 181
 <212> PRT
 <213> Chlamydia

<400> 295
 Lys Gly Gly Lys Met Ser Thr Thr Ile Ser Gly Asp Ala Ser Ser Leu
 5 10 15
 Pro Leu Pro Thr Ala Ser Cys Val Glu Thr Lys Ser Thr Ser Ser Ser
 20 25 30
 Thr Lys Gly Asn Thr Cys Ser Lys Ile Leu Asp Ile Ala Leu Ala Ile
 35 40 45
 Val Gly Ala Leu Val Val Val Ala Gly Val Leu Ala Leu Val Leu Cys
 50 55 60
 Ala Ser Asn Val Ile Phe Thr Val Ile Gly Ile Pro Ala Leu Ile Ile
 65 70 75 80
 Gly Ser Ala Cys Val Gly Ala Gly Ile Ser Arg Leu Met Tyr Arg Ser
 85 90 95
 Ser Tyr Ala Ser Leu Glu Ala Lys Asn Val Leu Ala Glu Gln Arg Leu
 100 105 110
 Arg Asn Leu Ser Glu Glu Lys Asp Ala Leu Ala Ser Val Ser Phe Ile
 115 120 125
 Asn Lys Met Phe Leu Arg Gly Leu Thr Asp Asp Leu Gln Ala Leu Glu
 130 135 140
 Ala Lys Val Met Glu Phe Glu Ile Asp Cys Leu Asp Arg Leu Glu Lys
 145 150 155 160
 Asn Glu Gln Ala Leu Leu Ser Asp Val Arg Leu Val Leu Ser Ser Tyr

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165

170

175

Thr Arg Trp Leu Asp
180

<210> 296
<211> 124
<212> PRT
<213> Chlamydia

<400> 296
Ile Tyr Glu Val Met Asn Met Asp Leu Glu Thr Arg Arg Ser Phe Ala
5 10 15
Val Gln Gln Gly His Tyr Gln Asp Pro Arg Ala Ser Asp Tyr Asp Leu
20 25 30
Pro Arg Ala Ser Asp Tyr Asp Leu Pro Arg Ser Pro Tyr Pro Thr Pro
35 40 45
Pro Leu Pro Ser Arg Tyr Gln Leu Gln Asn Met Asp Val Glu Ala Gly
50 55 60
Phe Arg Glu Ala Val Tyr Ala Ser Phe Val Ala Gly Met Tyr Asn Tyr
65 70 75 80
Val Val Thr Gln Pro Gln Glu Arg Ile Pro Asn Ser Gln Gln Val Glu
85 90 95
Gly Ile Leu Arg Asp Met Leu Thr Asn Gly Ser Gln Thr Phe Ser Asn
100 105 110
Leu Met Gln Arg Trp Asp Arg Glu Val Asp Arg Glu
115 120

<210> 297
<211> 488
<212> PRT
<213> Chlamydia

<400> 297
Lys Gly Ser Leu Pro Ile Leu Gly Pro Phe Leu Asn Gly Lys Met Gly
5 10 15
Phe Trp Arg Thr Ser Ile Met Lys Met Asn Arg Ile Trp Leu Leu Leu
20 25 30
Leu Thr Phe Ser Ser Ala Ile His Ser Pro Val Arg Gly Glu Ser Leu
35 40 45
Val Cys Lys Asn Ala Leu Gln Asp Leu Ser Phe Leu Glu His Leu Leu
50 55 60
Gln Val Lys Tyr Ala Pro Lys Thr Trp Lys Glu Gln Tyr Leu Gly Trp
65 70 75 80

Asp	Leu	Val	Gln	Ser 85	Ser	Val	Ser	Ala	Gln 90	Gln	Lys	Leu	Arg	Thr 95	Gln
Glu	Asn	Pro	Ser 100	Thr	Ser	Phe	Cys	Gln 105	Gln	Val	Leu	Ala	Asp 110	Phe	Ile
Gly	Gly	Leu 115	Asn	Asp	Phe	His	Ala 120	Gly	Val	Thr	Phe	Phe 125	Ala	Ile	Glu
Ser	Ala 130	Tyr	Leu	Pro	Tyr	Thr 135	Val	Gln	Lys	Ser	Ser 140	Asp	Gly	Arg	Phe
Tyr 145	Phe	Val	Asp	Ile	Met 150	Thr	Phe	Ser	Ser	Glu 155	Ile	Arg	Val	Gly	Asp 160
Glu	Leu	Leu	Glu	Val 165	Asp	Gly	Ala	Pro 170	Val	Gln	Asp	Val	Leu	Ala 175	Thr
Leu	Tyr	Gly	Ser 180	Asn	His	Lys	Gly	Thr 185	Ala	Ala	Glu	Glu	Ser 190	Ala	Ala
Leu	Arg	Thr 195	Leu	Phe	Ser	Arg	Met 200	Ala	Ser	Leu	Gly	His 205	Lys	Val	Pro
Ser	Gly 210	Arg	Thr	Thr	Leu	Lys 215	Ile	Arg	Arg	Pro	Phe 220	Gly	Thr	Thr	Arg
Glu 225	Val	Arg	Val	Lys	Trp 230	Arg	Tyr	Val	Pro	Glu 235	Gly	Val	Gly	Asp	Leu 240
Ala	Thr	Ile	Ala	Pro 245	Ser	Ile	Arg	Ala	Pro 250	Gln	Leu	Gln	Lys	Ser 255	Met
Arg	Ser	Phe	Phe 260	Pro	Lys	Lys	Asp	Asp 265	Ala	Phe	His	Arg	Ser 270	Ser	Ser
Leu	Phe	Tyr 275	Ser	Pro	Met	Val	Pro 280	His	Phe	Trp	Ala	Glu 285	Leu	Arg	Asn
His	Tyr 290	Ala	Thr	Ser	Gly	Leu 295	Lys	Ser	Gly	Tyr	Asn 300	Ile	Gly	Ser	Thr
Asp 305	Gly	Phe	Leu	Pro	Val 310	Ile	Gly	Pro	Val	Ile 315	Trp	Glu	Ser	Glu	Gly 320
Leu	Phe	Arg	Ala	Tyr 325	Ile	Ser	Ser	Val	Thr 330	Asp	Gly	Asp	Gly	Lys 335	Ser
His	Lys	Val	Gly 340	Phe	Leu	Arg	Ile	Pro 345	Thr	Tyr	Ser	Trp	Gln 350	Asp	Met
Glu	Asp	Phe 355	Asp	Pro	Ser	Gly	Pro 360	Pro	Pro	Trp	Glu	Glu 365	Phe	Ala	Lys
Ile	Ile 370	Gln	Val	Phe	Ser	Ser 375	Asn	Thr	Glu	Ala	Leu 380	Ile	Ile	Asp	Gln

Thr Asn Asn Pro Gly Gly Ser Val Leu Tyr Leu Tyr Ala Leu Leu Ser
385 390 395 400

Met Leu Thr Asp Arg Pro Leu Glu Leu Pro Lys His Arg Met Ile Leu
405 410 415

Thr Gln Asp Glu Val Val Asp Ala Leu Asp Trp Leu Thr Leu Leu Glu
420 425 430

Asn Val Asp Thr Asn Val Glu Ser Arg Leu Ala Leu Gly Asp Asn Met
435 440 445

Glu Gly Tyr Thr Val Asp Leu Gln Val Ala Glu Tyr Leu Lys Ser Phe
450 455 460

Gly Arg Gln Val Leu Asn Cys Trp Ser Lys Gly Asp Ile Glu Leu Ser
465 470 475 480

Thr Pro Ile Pro Leu Phe Gly Phe
485

<210> 298

<211> 140

<212> PRT

<213> Chlamydia

<400> 298

Arg Ile Asp Ile Ser Ser Val Thr Phe Phe Ile Gly Ile Leu Leu Ala
5 10 15

Val Asn Ala Leu Thr Tyr Ser His Val Leu Arg Asp Leu Ser Val Ser
20 25 30

Met Asp Ala Leu Phe Ser Arg Asn Thr Leu Ala Val Leu Leu Gly Leu
35 40 45

Val Ser Ser Val Leu Asp Asn Val Pro Leu Val Ala Ala Thr Ile Gly
50 55 60

Met Tyr Asp Leu Pro Met Asn Asp Pro Leu Trp Lys Leu Ile Ala Tyr
65 70 75 80

Thr Ala Gly Thr Gly Gly Ser Ile Leu Ile Ile Gly Ser Ala Ala Gly
85 90 95

Val Ala Tyr Met Gly Met Glu Lys Val Ser Phe Gly Trp Tyr Val Lys
100 105 110

His Ala Ser Trp Ile Ala Leu Ala Ser Tyr Phe Gly Gly Leu Ala Val
115 120 125

Tyr Phe Leu Met Glu Asn Cys Val Asn Leu Phe Val
130 135 140

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<400> 299															
His	Gln	Glu	Ile	Ala 5	Asp	Ser	Pro	Leu	Val 10	Lys	Lys	Ala	Glu	Glu 15	Gln
Ile	Asn	Gln	Ala 20	Gln	Gln	Asp	Ile	Gln 25	Thr	Ile	Thr	Pro	Ser 30	Gly	Leu
Asp	Ile	Pro 35	Ile	Val	Gly	Pro	Ser 40	Gly	Ser	Ala	Ala	Ser 45	Ala	Gly	Ser
Ala	Ala 50	Gly	Ala	Leu	Lys	Ser 55	Ser	Asn	Asn	Ser	Gly 60	Arg	Ile	Ser	Leu
Leu 65	Leu	Asp	Asp	Val	Asp 70	Asn	Glu	Met	Ala	Ala 75	Ile	Ala	Met	Gln	Gly 80
Phe	Arg	Ser	Met	Ile 85	Glu	Gln	Phe	Asn	Val 90	Asn	Asn	Pro	Ala	Thr 95	Ala
Lys	Glu	Leu	Gln 100	Ala	Met	Glu	Ala	Gln 105	Leu	Thr	Ala	Met	Ser 110	Asp	Gln
Leu	Val	Gly 115	Ala	Asp	Gly	Glu	Leu 120	Pro	Ala	Glu	Ile	Gln 125	Ala	Ile	Lys
Asp	Ala 130	Leu	Ala	Gln	Ala	Leu 135	Lys	Gln	Pro	Ser	Ala 140	Asp	Gly	Leu	Ala
Thr 145	Ala	Met	Gly	Gln	Val 150	Ala	Phe	Ala	Ala	Ala 155	Lys	Val	Gly	Gly	Gly 160
Ser	Ala	Gly	Thr	Ala 165	Gly	Thr	Val	Gln	Met 170	Asn	Val	Lys	Gln	Leu 175	Tyr
Lys	Thr	Ala	Phe 180	Ser	Ser	Thr	Ser	Ser 185	Ser	Ser	Tyr	Ala	Ala 190	Ala	Leu
Ser	Asp	Gly 195	Tyr	Ser	Ala	Tyr	Lys 200	Thr	Leu	Asn	Ser	Leu 205	Tyr	Ser	Glu
Ser	Arg 210	Ser	Gly	Val	Gln	Ser 215	Ala	Ile	Ser	Gln	Thr 220	Ala	Asn	Pro	Ala
Leu 225	Ser	Arg	Ser	Val	Ser 230	Arg	Ser	Gly	Ile	Glu 235	Ser	Gln	Gly	Arg	Ser 240
Ala	Asp	Ala	Ser	Gln 245	Arg	Ala	Ala	Glu	Thr 250	Ile	Val	Arg	Asp	Ser 255	Gln
Thr	Leu	Gly	Asp 260	Val	Tyr	Ser	Arg	Leu 265	Gln	Val	Leu	Asp	Ser 270	Leu	Met

Ala Val Ile Glu Gln Ala Pro Asn Met Val Tyr His Ser Tyr Pro Thr
165 170 175

Ser Arg Glu Glu Tyr Cys Ser Leu Arg Ile Asp Glu Thr Glu Asp Leu
 180 185 190

Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln Glu Lys Lys
 195 200 205

<210> 301
 <211> 183
 <212> PRT
 <213> Chlamydia

<400> 301
 Ile Pro Pro Ala Pro Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp
 5 10 15

Ile Asp Ala Asn Gly Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser
 20 25 30

Gly Arg Glu Gln Lys Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu
 35 40 45

Asp Glu Ile Gln Gln Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu
 50 55 60

Asp Lys Gln Arg Lys Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly
 65 70 75 80

Met Ile Phe Arg Ala Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile
 85 90 95

Pro Ala Glu Leu Val Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg
 100 105 110

Gln Ala Ile Lys Glu Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser
 115 120 125

Asp Glu Leu Ser Thr Arg Met Gln Lys Ile Gly Glu Ala Met Gln Ala
 130 135 140

Gln Ser Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly
 145 150 155 160

Pro Asn Ile Asn Ser Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg
 165 170 175

Pro Pro Ala Gly Gly Ser Ala
 180

<210> 302
 <211> 232
 <212> PRT
 <213> Chlamydia

<400> 302

03041130-04300

<400> 303
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Ile Lys Lys Ser Phe Lys Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn
20 25 30

Thr Gln Asn Cys Val Phe Ala Asp Asn Ile Lys Val Gly Gln Met Thr
 35 40 45
 Glu Pro Leu Lys Asp Gln Gln Ile Ile Leu Gly Thr Thr Ser Thr Pro
 50 55 60
 Val Ala Ala Lys Met Thr Ala Ser Asp Gly Ile Ser Leu Thr Val Ser
 65 70 75 80
 Asn Asn Pro Ser Thr Asn Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu
 85 90 95
 Lys Ala Tyr Gln Leu Ile Leu Glu Lys Leu Gly Asp Gln Ile Leu Gly
 100 105 110
 Gly Ile Ala Asp Thr Ile Val Asp Ser Thr Val Gln Asp Ile Leu Asp
 115 120 125
 Lys Ile Thr Thr Asp Pro Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn
 130 135 140
 Phe Pro Ile Thr Asn Lys Ile Gln Cys Asn Gly Leu Phe Thr Pro Arg
 145 150 155 160
 Asn Ile Glu Thr Leu Leu Gly Gly Thr Glu Ile Gly Lys Phe Thr Val
 165 170 175
 Thr Pro Lys Ser Ser Gly Ser Met Phe Leu Val Ser Ala Asp Ile Ile
 180 185 190
 Ala Ser Arg Met Glu Gly Gly Val Val Leu Ala Leu Val Arg Glu Gly
 195 200 205
 Asp Ser Lys Pro Tyr Ala Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro
 210 215 220
 Asn Leu Cys Ser Leu Arg Thr Arg Ile Ile Asn Thr Gly Leu
 225 230 235

 <210> 304
 <211> 133
 <212> PRT
 <213> Chlamydia

 <400> 304
 His Met His His His His His His Met Ala Ser Ile Cys Gly Arg Leu
 5 10 15
 Gly Ser Gly Thr Gly Asn Ala Leu Lys Ala Phe Phe Thr Gln Pro Ser
 20 25 30
 Asn Lys Met Ala Arg Val Val Asn Lys Thr Lys Gly Met Asp Lys Thr
 35 40 45
 Val Lys Val Ala Lys Ser Ala Ala Glu Leu Thr Ala Asn Ile Leu Glu
 50 55 60

0984133 042301

Gln Ala Gly Gly Ala Gly Ser Ser Ala His Ile Thr Ala Ser Gln Val
 65 70 75 80
 Ser Lys Gly Leu Gly Asp Thr Arg Thr Val Val Ala Leu Gly Asn Ala
 85 90 95
 Phe Asn Gly Ala Leu Pro Gly Thr Val Gln Ser Ala Gln Ser Phe Phe
 100 105 110
 Ser His Met Lys Ala Ala Ser Gln Lys Thr Gln Glu Gly Asp Glu Gly
 115 120 125
 Leu Thr Ala Asp Leu
 130

<210> 305
 <211> 125
 <212> PRT
 <213> Chlamydia

<400> 305
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg
 65 70 75 80
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu
 115 120 125

<210> 306
 <211> 38
 <212> DNA
 <213> Chlamydia trachomatis

<400> 306
 gagagcggcc gctcatgttt ataacaaagg aacttatg

<210> 307
 <211> 39
 <212> DNA
 <213> Chlamydia trachomatis

<400> 307
 gagagcggcc gcttacttag gtgagaagaa gggagtttc

39

<210> 308
 <211> 1860
 <212> DNA
 <213> Chlamydia trachomatis

<400> 308
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 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcatcatcc cggtgacgtc atctcgggtga cctggcaaac caagtcgggc 360
 ggcacgcgta cagggaaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatcacact ggcggccgct catgtttata acaaaggaac ttatgaatcg agttatagaa 480
 atccatgctc actacgatca aagacaactt tctcaatctc caaatacaaa cttcttagta 540
 catcatcctt atcttactct tattcccaag tttctactag gagctctaata cgtctatgct 600
 ccttattcgt ttgcagaaat ggaattagct atttctggag ataaacaagg taaagatcga 660
 gataccttta ccatgatctc ttctgtcctt gaaggcacta attacatcat caatcgcaaa 720
 ctcatactca gtgattttct gttactaaat aaagtttcat cagggggagc ctttcggaat 780
 cttagcaggga aaatttcctt cttaggaaaa aattcttctg cgtccattca ttttaaacac 840
 attaatatca atgggttttg agccggagtc ttttctgaat cctctattga atttactgat 900
 ttacgaaaac ttgttgcttt tggatctgaa agcacaggag gaatttttac tgcgaaagag 960
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 gcagcgaaca aaaaccattc tattcatttc tttgatcctg tcatggcatt gtcagcatca 1800
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<210> 309
 <211> 619
 <212> PRT
 <213> Chlamydia trachomatis

<400> 309
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 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala

		35				40				45					
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Met	Phe	Ile	Thr	Lys	Glu	Leu	Met	Asn	Arg	Val	Ile	Glu
145					150					155					160
Ile	His	Ala	His	Tyr	Asp	Gln	Arg	Gln	Leu	Ser	Gln	Ser	Pro	Asn	Thr
				165					170					175	
Asn	Phe	Leu	Val	His	His	Pro	Tyr	Leu	Thr	Leu	Ile	Pro	Lys	Phe	Leu
			180					185					190		
Leu	Gly	Ala	Leu	Ile	Val	Tyr	Ala	Pro	Tyr	Ser	Phe	Ala	Glu	Met	Glu
		195					200					205			
Leu	Ala	Ile	Ser	Gly	His	Lys	Gln	Gly	Lys	Asp	Arg	Asp	Thr	Phe	Thr
	210					215					220				
Met	Ile	Ser	Ser	Cys	Pro	Glu	Gly	Thr	Asn	Tyr	Ile	Ile	Asn	Arg	Lys
225					230					235					240
Leu	Ile	Leu	Ser	Asp	Phe	Ser	Leu	Leu	Asn	Lys	Val	Ser	Ser	Gly	Gly
				245					250					255	
Ala	Phe	Arg	Asn	Leu	Ala	Gly	Lys	Ile	Ser	Phe	Leu	Gly	Lys	Asn	Ser
			260					265					270		
Ser	Ala	Ser	Ile	His	Phe	Lys	His	Ile	Asn	Ile	Asn	Gly	Phe	Gly	Ala
		275					280					285			
Gly	Val	Phe	Ser	Glu	Ser	Ser	Ile	Glu	Phe	Thr	Asp	Leu	Arg	Lys	Leu
	290					295					300				
Val	Ala	Phe	Gly	Ser	Glu	Ser	Thr	Gly	Gly	Ile	Phe	Thr	Ala	Lys	Glu
	305				310					315					320
Asp	Ile	Ser	Phe	Lys	Asn	Asn	His	His	Ile	Ala	Phe	Arg	Asn	Asn	Ile
				325					330					335	
Thr	Lys	Gly	Asn	Gly	Gly	Val	Ile	Gln	Leu	Gln	Gly	Asp	Met	Lys	Gly
			340					345					350		
Ser	Val	Ser	Phe	Val	Asp	Gln	Arg	Gly	Ala	Ile	Ile	Phe	Thr	Asn	Asn
		355				360						365			
Gln	Ala	Val	Thr	Ser	Ser	Ser	Met	Lys	His	Ser	Gly	Arg	Gly	Gly	Ala
	370					375					380				
Ile	Ser	Gly	Asp	Phe	Ala	Gly	Ser	Arg	Ile	Leu	Phe	Leu	Asn	Asn	Gln
385					390					395					400
Gln	Ile	Thr	Phe	Glu	Gly	Asn	Ser	Ala	Val	His	Gly	Gly	Ala	Ile	Tyr
				405					410					415	
Asn	Lys	Asn	Gly	Leu	Val	Glu	Phe	Leu	Gly	Asn	Ala	Gly	Pro	Leu	Ala
			420					425					430		
Phe	Lys	Glu	Asn	Thr	Thr	Ile	Ala	Asn	Gly	Gly	Ala	Ile	Tyr	Thr	Ser
		435				440						445			
Asn	Phe	Lys	Ala	Asn	Gln	Gln	Thr	Ser	Pro	Ile	Leu	Phe	Ser	Gln	Asn
	450					455					460				
His	Ala	Asn	Lys	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Gln	Tyr	Val	Asn	Leu
465					470					475					480
Glu	Gln	Asn	Gln	Asp	Thr	Ile	Arg	Phe	Glu	Lys	Asn	Thr	Ala	Lys	Glu
				485					490					495	

Gly Gly Gly Ala Ile Thr Ser Ser Gln Cys Ser Ile Thr Ala His Asn
 500 505 510
 Thr Ile Thr Phe Ser Asp Asn Ala Ala Gly Asp Leu Gly Gly Gly Ala
 515 520 525
 Ile Leu Leu Glu Gly Lys Lys Pro Ser Leu Thr Leu Ile Ala His Ser
 530 535 540
 Gly Asn Ile Ala Phe Ser Gly Asn Thr Met Leu His Ile Thr Lys Lys
 545 550 555 560
 Ala Ser Leu Asp Arg His Asn Ser Ile Leu Ile Lys Glu Ala Pro Tyr
 565 570 575
 Lys Ile Gln Leu Ala Ala Asn Lys Asn His Ser Ile His Phe Phe Asp
 580 585 590
 Pro Val Met Ala Leu Ser Ala Ser Ser Ser Pro Ile Gln Ile Asn Ala
 595 600 605
 Pro Glu Tyr Glu Thr Pro Phe Phe Ser Pro Lys
 610 615

<210> 310

<211> 39

<212> DNA

<213> Chlamydia trachomatis

<400> 310

gagagcggcc gctccattct attcatttct ttgatcctg

39

<210> 311

<211> 33

<212> DNA

<213> Chlamydia trachomatis

<400> 311

gagagcggcc gcttagaagc caacatagcc tcc

33

<210> 312

<211> 2076

<212> DNA

<213> Chlamydia trachomatis

<400> 312

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cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacgag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaagt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcgcccgct	ccattctatt	catttctttg	atcctgtcat	ggcattgtca	480
gcatcatctt	cccctataca	aatcaatgct	cctgagtatg	aaactccctt	cttctcacct	540
aagggatga	tcgttttctc	gggtgcgaat	cttttagatg	atgctaaggga	agatgttgca	600
aatagaacat	cgatttttaa	ccaaccggtt	catctatata	atggcaccct	atctatcgaa	660
aatggagccc	atctgattgt	ccaaagcttc	aaacagaccg	gaggacgtat	cagtttatct	720
ccaggtacct	ccttggctct	atacacgatg	aactcgttct	tccatggcaa	catatccagc	780
aaagaacccc	tagaaattaa	tggtttaagc	tttggagtag	atatctctcc	ttctaattct	840
caagcagaga	tccgtgcccg	caacgctcct	ttacgattat	ccggatcccc	atctatccat	900
gatcctgaag	gattattcta	cgaaaatcgc	gatactgcag	catcaccata	ccaaatggaa	960
atcttgctca	cctctgataa	aactgtagat	atctccaaat	ttactactga	ttctctagtt	1020
acgaacaaac	aatcaggatt	ccaaggagcc	tggcatttta	gctggcagcc	aaataactata	1080

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aacaatacta aacaaaaaat attaagagct tcttggctcc caacaggaga atatgtcctt 1140
gaatccaatc gagtggggcg tgccgttcct aattccttat ggagcacatt tttactttta 1200
cagacagcct ctcataactt aggcgatcat ctatgtaata atcgatctct tattcctact 1260
tcatacttcg gagttttaat tggaggaact ggagcagaaa tgtctacca ctcctcagaa 1320
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ccccttactg tcaattctac attatgtgca gccttagatc acaacgcgat ggtccgcata 1560
tgctccaaaa aagatcacac ctatgggaaa tgggatacat tcggtatgcg aggaacatta 1620
ggagcctctt atacattcct agaatatgat caaactatgc gcgtattctc attcgccaac 1680
atcgaagcca caaatatctt gcaaagagct tttactgaaa caggctataa cccaagaagt 1740
ttttccaaga caaaacttct aaacatcgcc atccccatag ggattgggta tgaattctgc 1800
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aaacgagaaa acccatccac tcttgctcac ctggctatga atgattttgc ttggactacc 1920
aatggctggt cagttccaac ctccgcacac acattggcaa atcaattgat tcttcgctat 1980
aaagcatggt ccttatacat cacggcatat actatcaacc gtgaagggaa gaacctctcc 2040
aatagcttat cctgcggagg ctatgttggc ttctaa 2076

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<210> 313

<211> 691

<212> PRT

<213> Chlamydia trachomatis

<400> 313

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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
          20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
          35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
          50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
          85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
          100          105          110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
          115          120          125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
          130          135          140
Arg Pro Leu His Ser Ile His Phe Phe Asp Pro Val Met Ala Leu Ser
          145          150          155          160
Ala Ser Ser Ser Pro Ile Gln Ile Asn Ala Pro Glu Tyr Glu Thr Pro
          165          170          175
Phe Phe Ser Pro Lys Gly Met Ile Val Phe Ser Gly Ala Asn Leu Leu
          180          185          190
Asp Asp Ala Arg Glu Asp Val Ala Asn Arg Thr Ser Ile Phe Asn Gln
          195          200          205
Pro Val His Leu Tyr Asn Gly Thr Leu Ser Ile Glu Asn Gly Ala His
          210          215          220
Leu Ile Val Gln Ser Phe Lys Gln Thr Gly Gly Arg Ile Ser Leu Ser
          225          230          235          240
Pro Gly Ser Ser Leu Ala Leu Tyr Thr Met Asn Ser Phe Phe His Gly
          245          250          255
Asn Ile Ser Ser Lys Glu Pro Leu Glu Ile Asn Gly Leu Ser Phe Gly

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<210> 314

$\langle 210 \rangle$	317
$\langle 211 \rangle$	646

<212> PRT

<213> Chlamydia trachomatis

<400> 317

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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
		20						25				30			
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90						95
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Met	Ile	Lys	Arg	Thr	Ser	Leu	Ser	Phe	Ala	Cys	Leu	Ser
145					150					155					160
Phe	Phe	Tyr	Leu	Ser	Thr	Ile	Ser	Ile	Leu	Gln	Ala	Asn	Glu	Thr	Asp
			165						170					175	
Thr	Leu	Gln	Phe	Arg	Arg	Phe	Thr	Phe	Ser	Asp	Arg	Glu	Ile	Gln	Phe
			180					185					190		
Val	Leu	Asp	Pro	Ala	Ser	Leu	Ile	Thr	Ala	Gln	Asn	Ile	Val	Leu	Ser
		195					200					205			
Asn	Leu	Gln	Ser	Asn	Gly	Thr	Gly	Ala	Cys	Thr	Ile	Ser	Gly	Asn	Thr
	210					215						220			
Gln	Thr	Gln	Ile	Phe	Ser	Asn	Ser	Val	Asn	Thr	Thr	Ala	Asp	Ser	Gly
225					230					235					240
Gly	Ala	Phe	Asp	Met	Val	Thr	Thr	Ser	Phe	Thr	Ala	Ser	Asp	Asn	Ala
			245						250					255	
Asn	Leu	Leu	Phe	Cys	Asn	Asn	Tyr	Cys	Thr	His	Asn	Lys	Gly	Gly	Gly
			260					265					270		
Ala	Ile	Arg	Ser	Gly	Gly	Pro	Ile	Arg	Phe	Leu	Asn	Asn	Gln	Asp	Val
		275					280					285			
Leu	Phe	Tyr	Asn	Asn	Ile	Ser	Ala	Gly	Ala	Lys	Tyr	Val	Gly	Thr	Gly
	290					295					300				
Asp	His	Asn	Glu	Lys	Asn	Arg	Gly	Gly	Ala	Leu	Tyr	Ala	Thr	Thr	Ile
305					310					315					320
Thr	Leu	Thr	Gly	Asn	Arg	Thr	Leu	Ala	Phe	Ile	Asn	Asn	Met	Ser	Gly
			325						330					335	
Asp	Cys	Gly	Gly	Ala	Ile	Ser	Ala	Asp	Thr	Gln	Ile	Ser	Ile	Thr	Asp
			340					345					350		
Thr	Val	Lys	Gly	Ile	Leu	Phe	Glu	Asn	Asn	His	Thr	Leu	Asn	His	Ile
		355					360					365			
Pro	Tyr	Thr	Gln	Ala	Glu	Asn	Met	Ala	Arg	Gly	Gly	Ala	Ile	Cys	Ser
	370					375					380				
Arg	Arg	Asp	Leu	Cys	Ser	Ile	Ser	Asn	Asn	Ser	Gly	Pro	Ile	Val	Phe
385					390					395					400
Asn	Tyr	Asn	Gln	Gly	Gly	Lys	Gly	Gly	Ala	Ile	Ser	Ala	Thr	Arg	Cys
			405						410					415	
Val	Ile	Asp	Asn	Asn	Lys	Glu	Arg	Ile	Ile	Phe	Ser	Asn	Asn	Ser	Ser

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420 425 430
 Leu Gly Trp Ser Gln Ser Ser Ser Ala Ser Asn Gly Gly Ala Ile Gln
 435 440 445
 Thr Thr Gln Gly Phe Thr Leu Arg Asn Asn Lys Gly Ser Ile Tyr Phe
 450 455 460
 Asp Ser Asn Thr Ala Thr His Ala Gly Gly Ala Ile Asn Cys Gly Tyr
 465 470 475 480
 Ile Asp Ile Arg Asp Asn Gly Pro Val Tyr Phe Leu Asn Asn Ser Ala
 485 490 495
 Ala Trp Gly Ala Ala Phe Asn Leu Ser Lys Pro Arg Ser Ala Thr Asn
 500 505 510
 Tyr Ile His Thr Gly Thr Gly Asp Ile Val Phe Asn Asn Asn Val Val
 515 520 525
 Phe Thr Leu Asp Gly Asn Leu Leu Gly Lys Arg Lys Leu Phe His Ile
 530 535 540
 Asn Asn Asn Glu Ile Thr Pro Tyr Thr Leu Ser Leu Gly Ala Lys Lys
 545 550 555 560
 Asp Thr Arg Ile Tyr Phe Tyr Asp Leu Phe Gln Trp Glu Arg Val Lys
 565 570 575
 Glu Asn Thr Ser Asn Asn Pro Pro Ser Pro Thr Ser Arg Asn Thr Ile
 580 585 590
 Thr Val Asn Pro Glu Thr Glu Phe Ser Gly Ala Val Val Phe Ser Tyr
 595 600 605
 Asn Gln Met Ser Ser Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn
 610 615 620
 Tyr Ile Lys Glu Ala Pro Thr Thr Leu Lys Phe Gly Thr Leu Ala Ile
 625 630 635 640
 Glu Asp Asp Ala Glu Leu
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<210> 318
 <211> 34
 <212> DNA
 <213> Chlamydia trachomatis

<400> 318
 gagagcggcc gctcgacata cgaactctga tggg

34

<210> 319
 <211> 33
 <212> DNA
 <213> Chlamydia trachomatis

<400> 319
 gagagcggcc gcttaaaaga ccagagctcc tcc

33

<210> 320
 <211> 2148
 <212> DNA
 <213> Chlamydia trachomatis

<400> 320
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 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300

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gcgcttaacg ggcacatcc cggtgacgtc atctcggtga cctggcaaac caagtcgggc 360
ggcacgcgta cagggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420
ccatcacact ggcgccgct cgacatacga actctgatgg gtaaagaaca caattacatt 480
aaagaagccc caactacttt aaaattcggg acgctagcca tagaagatga tgcagaatta 540
gaaatcttca atatcccgtt tacccaaaat ccgactagcc ttcttgcttt aggaagcggc 600
gctacgctga ctggtggaaa gcacggtaag ctcaatatta caaatcttgg tggtatttta 660
cccattattc tcaaagaggg gaagagtccg ccttgatttc gcgtcaaccc acaagatatg 720
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atcaaaggag cttattcttc tgatacatgg ccaacactct cttgggaaat ggaactagct 1920
taccaacca ccctctactg gaaacgtcct ctactcaaca cactattaat ccaaaataac 1980
ggttcttggg tcaccacaaa taccacatta gctaaacatt ctttttatgg gagagggtct 2040
cactccctca aattttctca tctgaaacta tttgctaact atcaagcaga agtggctact 2100
tccactgtct cacactacat caatgcagga ggagctctgg tcttttaa 2148

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<210> 321
<211> 715
<212> PRT
<213> Chlamydia trachomatis

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<400> 321
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1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
20        25        30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35        40        45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50        55        60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65        70        75        80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85        90        95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100       105       110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115       120       125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130       135       140
Arg Pro Leu Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn Tyr Ile

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145					150					155					160
Lys	Glu	Ala	Pro	Thr 165	Thr	Leu	Lys	Phe	Gly 170	Thr	Leu	Ala	Ile	Glu 175	Asp
Asp	Ala	Glu	Leu 180	Glu	Ile	Phe	Asn	Ile 185	Pro	Phe	Thr	Gln	Asn 190	Pro	Thr
Ser	Leu	Leu 195	Ala	Leu	Gly	Ser	Gly 200	Ala	Thr	Leu	Thr	Val 205	Gly	Lys	His
Gly	Lys 210	Leu	Asn	Ile	Thr	Asn 215	Leu	Gly	Val	Ile	Leu 220	Pro	Ile	Ile	Leu
Lys 225	Glu	Gly	Lys	Ser	Pro 230	Pro	Cys	Ile	Arg	Val 235	Asn	Pro	Gln	Asp	Met 240
Thr	Gln	Asn	Thr	Gly 245	Thr	Gly	Gln	Thr	Pro 250	Ser	Ser	Thr	Ser	Ser 255	Ile
Ser	Thr	Pro	Met 260	Ile	Ile	Phe	Asn	Gly 265	Arg	Leu	Ser	Ile	Val 270	Asp	Glu
Asn	Tyr	Glu 275	Ser	Val	Tyr	Asp	Ser 280	Met	Asp	Leu	Ser	Arg 285	Gly	Lys	Ala
Glu	Gln 290	Leu	Ile	Leu	Ser	Ile 295	Glu	Thr	Thr	Asn	Asp 300	Gly	Gln	Leu	Asp
Ser 305	Asn	Trp	Gln	Ser	Ser 310	Leu	Asn	Thr	Ser	Leu 315	Leu	Ser	Pro	Pro	His 320
Tyr	Gly	Tyr	Gln	Gly 325	Leu	Trp	Thr	Pro	Asn 330	Trp	Ile	Thr	Thr	Thr 335	Tyr
Thr	Ile	Thr	Leu 340	Asn	Asn	Asn	Ser	Ser 345	Ala	Pro	Thr	Ser	Ala 350	Thr	Ser
Ile	Ala	Glu 355	Gln	Lys	Lys	Thr	Ser 360	Glu	Thr	Phe	Thr	Pro 365	Ser	Asn	Thr
Thr	Thr 370	Ala	Ser	Ile	Pro	Asn 375	Ile	Lys	Ala	Ser	Ala 380	Gly	Ser	Gly	Ser
Gly 385	Ser	Ala	Ser	Asn	Ser 390	Gly	Glu	Val	Thr	Ile 395	Thr	Lys	His	Thr	Leu 400
Val	Val	Asn	Trp	Ala 405	Pro	Val	Gly	Tyr	Ile 410	Val	Asp	Pro	Ile	Arg 415	Arg
Gly	Asp	Leu	Ile 420	Ala	Asn	Ser	Leu	Val 425	His	Ser	Gly	Arg	Asn 430	Met	Thr
Met	Gly	Leu 435	Arg	Ser	Leu	Leu	Pro 440	Asp	Asn	Ser	Trp	Phe 445	Ala	Leu	Gln
Gly	Ala 450	Ala	Thr	Thr	Leu	Phe 455	Thr	Lys	Gln	Gln	Lys 460	Arg	Leu	Ser	Tyr
His 465	Gly	Tyr	Ser	Ser	Ala 470	Ser	Lys	Gly	Tyr	Thr 475	Val	Ser	Ser	Gln	Ala 480
Ser	Gly	Ala	His	Gly 485	His	Lys	Phe	Leu	Leu 490	Ser	Phe	Ser	Gln	Ser 495	Ser
Asp	Lys	Met	Lys 500	Glu	Lys	Glu	Thr	Asn 505	Asn	Arg	Leu	Ser	Ser 510	Arg	Tyr
Tyr	Leu	Ser 515	Ala	Leu	Cys	Phe	Glu 520	His	Pro	Met	Phe	Asp 525	Arg	Ile	Ala
Leu	Ile 530	Gly	Ala	Ala	Ala	Cys 535	Asn	Tyr	Gly	Thr	His 540	Asn	Met	Arg	Ser
Phe 545	Tyr	Gly	Thr	Lys	Lys 550	Ser	Ser	Lys	Gly	Lys 555	Phe	His	Ser	Thr	Thr 560
Leu	Gly	Ala	Ser	Leu 565	Arg	Cys	Glu	Leu	Arg 570	Asp	Ser	Met	Pro	Leu 575	Arg
Ser	Ile	Met	Leu 580	Thr	Pro	Phe	Ala	Gln 585	Ala	Leu	Phe	Ser	Arg 590	Thr	Glu
Pro	Ala	Ser 595	Ile	Arg	Glu	Ser	Gly 600	Asp	Leu	Ala	Arg	Leu 605	Phe	Thr	Leu

Glu Gln Ala His Thr Ala Val Val Ser Pro Ile Gly Ile Lys Gly Ala
 610 615 620
 Tyr Ser Ser Asp Thr Trp Pro Thr Leu Ser Trp Glu Met Glu Leu Ala
 625 630 635 640
 Tyr Gln Pro Thr Leu Tyr Trp Lys Arg Pro Leu Leu Asn Thr Leu Leu
 645 650 655
 Ile Gln Asn Asn Gly Ser Trp Val Thr Asn Thr Pro Leu Ala Lys
 660 665 670
 His Ser Phe Tyr Gly Arg Gly Ser His Ser Leu Lys Phe Ser His Leu
 675 680 685
 Lys Leu Phe Ala Asn Tyr Gln Ala Glu Val Ala Thr Ser Thr Val Ser
 690 695 700
 His Tyr Ile Asn Ala Gly Gly Ala Leu Val Phe
 705 710 715

<210> 322

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 322

gagagcggcc gctcatgcct ttttctttga gatctac

37

<210> 323

<211> 36

<212> DNA

<213> Chlamydia trachomatis

<400> 323

gagagcggcc gcttacacag atccattacc ggactg

36

<210> 324

<211> 1896

<212> DNA

<213> Chlamydia trachomatis

<400> 324

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accgttcata	tggggcctac	cgccttccctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacgag	tccaacgctg	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgaacggcgt	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cgggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	caggggaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	catgcctttt	tctttgagat	ctacatcatt	ttgtttttta	480
gcttgtttgt	gttcttattc	gtatggattc	gcgagctctc	ctcaagtgtt	aacacctaat	540
gtaaccactc	cttttaaggg	ggacgatgtt	tacttgaatg	gagactgcgc	ttttgtcaat	600
gtctatgcag	gggcagagaa	cggctcaatt	atctcagcta	atggcgacaa	tttaacgatt	660
accggacaaa	accatacatt	atcattttaca	gattctcaag	ggccagttct	tcaaaattat	720
gccttcattt	cagcaggaga	gacacttact	ctgaaagatt	tttcgagttt	gatgttctcg	780
aaaaatgttt	cttgcggaga	aaagggaatg	atctcaggga	aaaccgtgag	tatttccgga	840
gcaggcgaag	tgattttttg	ggataactct	gtgggggtatt	ctcctttgtc	tattgtgccca	900
gcacgcactc	caactcctcc	agcaccagca	ccagctcctg	ctgcttcaag	ctctttatct	960
ccaacagtta	gtgatgctcg	gaaaggggtct	atcttttctg	tagagactag	tttgagatc	1020
tcaggcgta	aaaaaggggt	catgttcgat	aataatgccg	ggaatttttg	aacagttttt	1080
cgaggtaata	gtaataataa	tgctggtagt	gggggtagtg	ggtctgctac	aacaccaagt	1140
tttacagtta	aaaactgtaa	agggaaagtt	tctttcacag	ataacgtagc	ctcctgtgga	1200

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ggcggagtag tctacaaagg aactgtgctt ttcaaagaca atgaaggagg catattcttc 1260
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acggagacag gaggcggtgg aggagttatt tgctctccag atgattctgt aaagtttgaa 1380
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gaaaaaggcg gtggagctat ttatgctcct actatcgata taagcacgaa tggaggatcg 1560
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<210> 325

<211> 631

<212> PRT

<213> Chlamydia trachomatis

<400> 325

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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His Pro Gly Asp Val Ile Ser
 100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130         135         140
Arg Pro Leu Met Pro Phe Ser Leu Arg Ser Thr Ser Phe Cys Phe Leu
 145         150         155         160
Ala Cys Leu Cys Ser Tyr Ser Tyr Gly Phe Ala Ser Ser Pro Gln Val
 165         170         175
Leu Thr Pro Asn Val Thr Thr Pro Phe Lys Gly Asp Asp Val Tyr Leu
 180         185         190
Asn Gly Asp Cys Ala Phe Val Asn Val Tyr Ala Gly Ala Glu Asn Gly
 195         200         205
Ser Ile Ile Ser Ala Asn Gly Asp Asn Leu Thr Ile Thr Gly Gln Asn
 210         215         220
His Thr Leu Ser Phe Thr Asp Ser Gln Gly Pro Val Leu Gln Asn Tyr
 225         230         235         240
Ala Phe Ile Ser Ala Gly Glu Thr Leu Thr Leu Lys Asp Phe Ser Ser
 245         250         255
Leu Met Phe Ser Lys Asn Val Ser Cys Gly Glu Lys Gly Met Ile Ser
 260         265         270
Gly Lys Thr Val Ser Ile Ser Gly Ala Gly Glu Val Ile Phe Trp Asp
 275         280         285
Asn Ser Val Gly Tyr Ser Pro Leu Ser Ile Val Pro Ala Ser Thr Pro
 290         295         300

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0904132-042304

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<210> 326
<211> 40
<212> DNA
<213> Chlamydia trachomatis
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40

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<210> 327
<211> 33
<212> DNA
<213> Chlamydia trachomatis
<400> 327
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gagagcggcc gcttaaaaga ttctattcaa gcc

33

<210> 328

<211> 2148

<212> DNA

<213> Chlamydia trachomatis

<400> 328

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accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
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ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcgccgct	cgatcctgta	gtacaaaata	attcagcagc	gggtgcatcg	480
acaccatcac	catcttcttc	ttctatgcct	gggtgctgtca	cgattaatca	gtccggtaat	540
ggatctgtga	tttttaccgc	cgagtcattg	actccttcag	aaaaacttca	agttcttaac	600
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aagttgggga	ttgatttaga	atccttttta	actcctaact	ataagacggc	catactgggt	840
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aagacaccta	tacaaggatc	cccgtggca	cggcacgcct	tcttcttaga	agtgcagatg	2040
actttgtata	ttcatcattt	tggaaagacc	tatatgaact	attcattaga	tgctcgtcgt	2100
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<210> 329

<211> 715

<212> PRT

<213> Chlamydia trachomatis

<400> 329

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
		20						25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			

Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
50						55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Asp	Pro	Val	Val	Gln	Asn	Asn	Ser	Ala	Ala	Gly	Ala	Ser
145					150					155					160
Thr	Pro	Ser	Pro	Ser	Ser	Ser	Ser	Met	Pro	Gly	Ala	Val	Thr	Ile	Asn
				165					170					175	
Gln	Ser	Gly	Asn	Gly	Ser	Val	Ile	Phe	Thr	Ala	Glu	Ser	Leu	Thr	Pro
			180					185					190		
Ser	Glu	Lys	Leu	Gln	Val	Leu	Asn	Ser	Thr	Ser	Asn	Phe	Pro	Gly	Ala
		195					200					205			
Leu	Thr	Val	Ser	Gly	Gly	Glu	Leu	Val	Val	Thr	Glu	Gly	Ala	Thr	Leu
	210					215					220				
Thr	Thr	Gly	Thr	Ile	Thr	Ala	Thr	Ser	Gly	Arg	Val	Thr	Leu	Gly	Ser
225					230					235					240
Gly	Ala	Ser	Leu	Ser	Ala	Val	Ala	Gly	Ala	Ala	Asn	Asn	Asn	Tyr	Thr
				245					250					255	
Cys	Thr	Val	Ser	Lys	Leu	Gly	Ile	Asp	Leu	Glu	Ser	Phe	Leu	Thr	Pro
			260					265					270		
Asn	Tyr	Lys	Thr	Ala	Ile	Leu	Gly	Ala	Asp	Gly	Thr	Val	Thr	Val	Asn
		275					280					285			
Ser	Gly	Ser	Thr	Leu	Asp	Leu	Val	Met	Glu	Asn	Glu	Ala	Glu	Val	Tyr
	290					295					300				
Asp	Asn	Pro	Leu	Phe	Val	Gly	Ser	Leu	Thr	Ile	Pro	Phe	Val	Thr	Leu
305					310					315					320
Ser	Ser	Ser	Ser	Ala	Ser	Asn	Gly	Val	Thr	Lys	Asn	Ser	Val	Thr	Ile
				325						330				335	
Asn	Asp	Ala	Asp	Ala	Ala	His	Tyr	Gly	Tyr	Gln	Gly	Ser	Trp	Ser	Ala
			340					345					350		
Asp	Trp	Thr	Lys	Pro	Pro	Leu	Ala	Pro	Asp	Ala	Lys	Gly	Met	Val	Pro
		355					360					365			
Pro	Asn	Thr	Asn	Asn	Thr	Leu	Tyr	Leu	Thr	Trp	Arg	Pro	Ala	Ser	Asn
	370					375					380				
Tyr	Gly	Glu	Tyr	Arg	Leu	Asp	Pro	Gln	Arg	Lys	Gly	Glu	Leu	Val	Pro
385					390					395					400
Asn	Ser	Leu	Trp	Val	Ala	Gly	Ser	Ala	Leu	Arg	Thr	Phe	Thr	Asn	Gly
				405					410					415	
Leu	Lys	Glu	His	Tyr	Val	Ser	Arg	Asp	Val	Gly	Phe	Val	Ala	Ser	Leu
			420					425					430		
His	Ala	Leu	Gly	Asp	Tyr	Ile	Leu	Asn	Tyr	Thr	Gln	Asp	Asp	Arg	Asp
		435					440					445			
Gly	Phe	Leu	Ala	Arg	Tyr	Gly	Gly	Phe	Gln	Ala	Thr	Ala	Ala	Ser	His
	450					455					460				
Tyr	Glu	Asn	Gly	Ser	Ile	Phe	Gly	Val	Ala	Phe	Gly	Gln	Leu	Tyr	Gly
465					470					475					480
Gln	Thr	Lys	Ser	Arg	Met	Tyr	Tyr	Ser	Lys	Asp	Ala	Gly	Asn	Met	Thr
				485					490					495	
Met	Leu	Ser	Cys	Phe	Gly	Arg	Ser	Tyr	Val	Asp	Ile	Lys	Gly	Thr	Glu

500 505 510
 Thr Val Met Tyr Trp Glu Thr Ala Tyr Gly Tyr Ser Val His Arg Met
 515 520 525
 His Thr Gln Tyr Phe Asn Asp Lys Thr Gln Lys Phe Asp His Ser Lys
 530 535 540
 Cys His Trp His Asn Asn Tyr Tyr Ala Phe Val Gly Ala Glu His
 545 550 555 560
 Asn Phe Leu Glu Tyr Cys Ile Pro Thr Arg Gln Leu Ala Arg Asp Tyr
 565 570 575
 Glu Leu Thr Gly Phe Met Arg Phe Glu Met Ala Gly Gly Trp Ser Ser
 580 585 590
 Ser Thr Arg Glu Thr Gly Ser Leu Thr Arg Tyr Phe Ala Arg Gly Ser
 595 600 605
 Gly His Asn Met Ser Leu Pro Ile Gly Ile Val Ala His Ala Val Ser
 610 615 620
 His Val Arg Arg Ser Pro Ser Lys Leu Thr Leu Asn Met Gly Tyr
 625 630 635 640
 Arg Pro Asp Ile Trp Arg Val Thr Pro His Cys Asn Met Glu Ile Ile
 645 650 655
 Ala Asn Gly Val Lys Thr Pro Ile Gln Gly Ser Pro Leu Ala Arg His
 660 665 670
 Ala Phe Phe Leu Glu Val His Asp Thr Leu Tyr Ile His His Phe Gly
 675 680 685
 Arg Ala Tyr Met Asn Tyr Ser Leu Asp Ala Arg Arg Arg Gln Thr Ala
 690 695 700
 His Phe Val Ser Met Gly Leu Asn Arg Ile Phe
 705 710 715

<210> 330
 <211> 38
 <212> DNA
 <213> Chlymadia trachomatis

<400> 330
 gagagcggcc gctcatgaaa tggctgtcag ctactgcg

38

<210> 331
 <211> 34
 <212> DNA
 <213> Chlymadia trachomatis

<400> 331
 gagcggccgc ttacttaatg cgaatttctt caag

34

<210> 332
 <211> 1557
 <212> DNA
 <213> Chlymadia trachomatis

<400> 332
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 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggctcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggc cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcacatcc cggtgacgtc atctcgggtga cctggcaaac caagtcgggc 360
 ggcacgcgta caggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420

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ccatcacact ggcgccgct catgaaatgg ctgtcagcta ctgcggtggt tgctgctggt 480
ctccccctcag ttccaggggt ttgcttccca gaacctaaag aattaaattt ctctcgcgta 540
gaaacttctt cctctaccac ttttactgaa acaattggag aagctggggc agaatatatc 600
gtctctggta acgcatcttt cacaaaaattt accaacattc ctactaccga tacaacaact 660
cccacgaact caaactcctc tagctctagc ggagaaactg cttccgtttc tgaggatagt 720
gactctacaa caacgactcc tgatcctaaa ggtggcgggc ccttttataa cgcgactcc 780
ggagttttgt cctttatgac acgatcagga acagaagggt ccttaactct gtctgagata 840
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acaagtctaa ccattccaaa taacttatcc cagctatccg gaggagcgat ttttgagga 960
tctacaatct ccctatcagg gattactaaa gcgactttct cctgcaactc tgcagaagtt 1020
cctgctcctg ttaagaaaacc tacagaacct aaagctcaaa cagcaagcga aacgtcgggt 1080
tctagtagtt ctacgggaaa tgattcgggt tcttcccca gttccagtag agctgaaccc 1140
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gatacagaaa catcaactcc ctctcataag ccaggatctg ggggagctat ctatgctaaa 1260
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gtacaaaacta acggtgctga agaaaaggga ggagctatct atgctaaagg tgacctctca 1440
attcaatctt ctaaacagag tctttttaat tctaactaca gtaaacaagg tggggggggt 1500
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<210> 333

<211> 518

<212> PRT

<213> Chlymadia trachomatis

<400> 333

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 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130         135         140
Arg Pro Leu Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val
 145         150         155         160
Leu Pro Ser Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn
 165         170         175
Phe Ser Arg Val Glu Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Ile
 180         185         190
Gly Glu Ala Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr
 195         200         205
Lys Phe Thr Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser
 210         215         220
Asn Ser Ser Ser Ser Ser Gly Glu Thr Ala Ser Val Ser Glu Asp Ser
 225         230         235         240
Asp Ser Thr Thr Thr Thr Pro Asp Pro Lys Gly Gly Gly Ala Phe Tyr

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245 250 255
 Asn Ala His Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu
 260 265 270
 Gly Ser Leu Thr Leu Ser Glu Ile Lys Met Thr Gly Glu Gly Gly Ala
 275 280 285
 Ile Phe Ser Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Ser Leu Thr
 290 295 300
 Ile Gln Asn Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Gly
 305 310 315 320
 Ser Thr Ile Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Cys Asn
 325 330 335
 Ser Ala Glu Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala
 340 345 350
 Gln Thr Ala Ser Glu Thr Ser Gly Ser Ser Ser Ser Ser Gly Asn Asp
 355 360 365
 Ser Val Ser Ser Pro Ser Ser Arg Ala Glu Pro Ala Ala Ala Asn
 370 375 380
 Leu Gln Ser His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr
 385 390 395 400
 Asp Thr Glu Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala
 405 410 415
 Ile Tyr Ala Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu
 420 425 430
 Phe Ser Ile Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu
 435 440 445
 Lys Asp Val Ser Phe Glu Asn Ile Thr Ser Leu Lys Val Gln Thr Asn
 450 455 460
 Gly Ala Glu Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser
 465 470 475 480
 Ile Gln Ser Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln
 485 490 495
 Gly Gly Gly Ala Leu Tyr Val Glu Gly Ile Asn Phe Gln Asp Leu
 500 505 510
 Glu Glu Ile Arg Ile Lys
 515

<210> 334
 <211> 37
 <212> DNA
 <213> Chlymadia trachomatis

<400> 334
 gagagcggcc gctcggtgac ctctcaattc aatcttc

37

<210> 335
 <211> 39
 <212> DNA
 <213> Chlamydia trachomatis

<400> 335
 gagagcggcc gcttagttct ctgttacaga taaggagac

39

<210> 336
 <211> 1758
 <212> DNA
 <213> Chlymadia trachomatis

<400> 336
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 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tccggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgacagag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcatcatcc cggtgacgtc atctcgggtg cctggcaaac caagtcgggc 360
 ggacgcgta cagggaaact gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatcacact ggcgccgct cggtgacctc tcaattcaat ctctaaaca gagtcttttt 480
 aattctaact acagtaaaca aggtgggggg gctctatatg ttgaaggagg tataaacttc 540
 caagatcttg aagaaattcg cattaagtac aataaagctg gaacgttcga aacaaaaaaa 600
 atcactttac ctcttttaaa agctcaagca tctgcaggaa atgcagatgc ttgggcctct 660
 tcctctcctc aatctgggtc tggagcaact acagtctccg actcaggaga ctctagctct 720
 ggctcagact cggatacctc agaaacagtt ccagtcacag ctaaaggcgg tgggctttat 780
 actgataaga atcttttcgat tactaacatc acaggaatta tcgaaattgc aaataacaaa 840
 cgcacagatg ttggagggtg tgcttacgta aaaggaaccc ttacttgtga aaactctcac 900
 cgtctacaat ttttgaaaaa ctcttccgat aaacaagggtg gaggaatcta cggagaagac 960
 aacatcaccc tatctaattt gacagggaag actctattcc aagagaatac tgccaaagaa 1020
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 aatgggtgtg gagcccacac atgcccagat agcttcccaa cggcgggatac tgcagaacag 1380
 cccgcagcag ctctcgccgc gacgtctact cccaaatctg ccccgggtctc aactgctcta 1440
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 tctcctgcaa cctctaataa ggaaactcaa gatcctaata ctgatacaga cttattgatc 1560
 gattatgtag ttgatacgac tatcagcaaa aacactgcta agaaaggcgg tggaatctat 1620
 gctaaaaaag ccaagatgtc ccgcatagac caactgaata tctctgagaa ctccgctaca 1680
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 tctgtaacag agaactaa 1758

<210> 337
 <211> 585
 <212> PRT
 <213> Chlamydia trachomatis

<400> 337
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 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35 40 45
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Gly Asp Leu Ser Ile Gln Ser Ser Lys Gln Ser Leu Phe

145					150					155				160
Asn	Ser	Asn	Tyr	Ser	Lys	Gln	Gly	Gly	Gly	Ala	Leu	Tyr	Val	Glu
				165					170					175
Gly	Ile	Asn	Phe	Gln	Asp	Leu	Glu	Glu	Ile	Arg	Ile	Lys	Tyr	Asn
			180						185				190	
Ala	Gly	Thr	Phe	Glu	Thr	Lys	Lys	Ile	Thr	Leu	Pro	Ser	Leu	Lys
		195					200					205		Ala
Gln	Ala	Ser	Ala	Gly	Asn	Ala	Asp	Ala	Trp	Ala	Ser	Ser	Ser	Pro
	210					215					220			Gln
Ser	Gly	Ser	Gly	Ala	Thr	Thr	Val	Ser	Asp	Ser	Gly	Asp	Ser	Ser
225					230				235					240
Gly	Ser	Asp	Ser	Asp	Thr	Ser	Glu	Thr	Val	Pro	Val	Thr	Ala	Lys
				245					250					255
Gly	Gly	Leu	Tyr	Thr	Asp	Lys	Asn	Leu	Ser	Ile	Thr	Asn	Ile	Thr
			260					265					270	Gly
Ile	Ile	Glu	Ile	Ala	Asn	Asn	Lys	Ala	Thr	Asp	Val	Gly	Gly	Gly
		275					280					285		Ala
Tyr	Val	Lys	Gly	Thr	Leu	Thr	Cys	Glu	Asn	Ser	His	Arg	Leu	Gln
	290					295					300			Phe
Leu	Lys	Asn	Ser	Ser	Asp	Lys	Gln	Gly	Gly	Gly	Ile	Tyr	Gly	Glu
305					310				315					320
Asn	Ile	Thr	Leu	Ser	Asn	Leu	Thr	Gly	Lys	Thr	Leu	Phe	Gln	Glu
				325					330					335
Thr	Ala	Lys	Glu	Gly	Gly	Gly	Gly	Leu	Phe	Ile	Lys	Gly	Thr	Asp
			340					345					350	Lys
Ala	Leu	Thr	Met	Thr	Gly	Leu	Asp	Ser	Phe	Cys	Leu	Ile	Asn	Asn
		355					360					365		Thr
Ser	Glu	Lys	His	Gly	Gly	Gly	Ala	Phe	Val	Thr	Lys	Glu	Ile	Ser
	370					375				380				Gln
Thr	Tyr	Thr	Ser	Asp	Val	Glu	Thr	Ile	Pro	Gly	Ile	Thr	Pro	Val
385					390					395				400
Gly	Glu	Thr	Val	Ile	Thr	Gly	Asn	Lys	Ser	Thr	Gly	Gly	Asn	Gly
				405					410					415
Gly	Val	Cys	Thr	Lys	Arg	Leu	Ala	Leu	Ser	Asn	Leu	Gln	Ser	Ile
			420					425					430	Ser
Ile	Ser	Gly	Asn	Ser	Ala	Ala	Glu	Asn	Gly	Gly	Gly	Ala	His	Thr
		435					440					445		Cys
Pro	Asp	Ser	Phe	Pro	Thr	Ala	Asp	Thr	Ala	Glu	Gln	Pro	Ala	Ala
	450					455				460				Ala
Ser	Ala	Ala	Thr	Ser	Thr	Pro	Lys	Ser	Ala	Pro	Val	Ser	Thr	Ala
465					470					475				480
Ser	Thr	Pro	Ser	Ser	Ser	Thr	Val	Ser	Ser	Leu	Thr	Leu	Leu	Ala
				485					490					495
Ser	Ser	Gln	Ala	Ser	Pro	Ala	Thr	Ser	Asn	Lys	Glu	Thr	Gln	Asp
			500					505					510	Pro
Asn	Ala	Asp	Thr	Asp	Leu	Leu	Ile	Asp	Tyr	Val	Val	Asp	Thr	Thr
		515					520					525		Ile
Ser	Lys	Asn	Thr	Ala	Lys	Lys	Gly	Gly	Gly	Ile	Tyr	Ala	Lys	Lys
	530					535					540			Ala
Lys	Met	Ser	Arg	Ile	Asp	Gln	Leu	Asn	Ile	Ser	Glu	Asn	Ser	Ala
545					550					555				560
Glu	Ile	Gly	Gly	Gly	Ile	Cys	Cys	Lys	Glu	Ser	Leu	Glu	Leu	Asp
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Leu	Val	Ser	Leu	Ser	Val	Thr	Glu	Asn						
			580					585						

<210> 338

<211> 38
 <212> DNA
 <213> Chlamydai trachomatis

<400> 338
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<210> 339
 <211> 35
 <212> DNA
 <213> Chlamydia trachomatis

<400> 339
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<210> 340
 <211> 1965
 <212> DNA
 <213> Chlamydia trachomatis

<400> 340
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 accgttcata tcgggcctac cgccttctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctcggcgcg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcatcatcc cgggtgacgtc atctcgggtga cctggcaaac caagtccggc 360
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 ggtggaggta tctgctgtaa agaactctta gaactagatg ctctagtctc cttatctgta 540
 acagagaacc ttgttgggaa agaaggtgga ggcttacatg ctaaaactgt aaatatttct 600
 aatctgaaat caggcttctc tttctcgaac aacaaagcaa actcctcctc cacaggagtc 660
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 gcacatcat ctccagcaac accaacttat tcagggtgtag taggaggagc tatctatgga 780
 gaaaaggtta cattctctca atgtagcggg acttgtcagt tctctgggaa ccaagctatc 840
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 gttacattga attgtcctgc gacattctct aacaatacag cctctatagc tacaccgaag 1080
 acttcttctg aagatggatc ctcaggaaat tctattaaag ataccattgg aggagccatt 1140
 gcagggacag ccattaccct atctggagtc tctcgatttt cagggaatac ggctgattta 1200
 ggagctgcaa taggaactct agctaatagca aatacaccca gtgcaactag cggatctcaa 1260
 aatagcatta cagaaaaaat tacttttagaa aacggttctt ttatttttga aagaaaccaa 1320
 gctaataaac gtggagcgat ttactctcct agcgtttcca ttaaagggaa taatattacc 1380
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 tctgcaacat ctggacaaaa tacaataact gccaaactatg gggcagccat ctttgagat 1560
 ccaggaacca ctcaatcgtc tcaaacagat gccattttta cccttcttgc ttcttctgga 1620
 aacattactt ttgaacaaa cagtttacag aataaccaag gtgatactcc cgtagcaag 1680
 ttttgtagta ttgcaggata cgtcaaactc tctctacaag cgcgtaaagg gaagactatt 1740
 agctttttcg attgtgtgca cacctctacc aaaaaaacag gttcaacaca aaacgtttat 1800
 gaaactttag atattaataa agaagagAAC agtaatccat atacaggAAC tattgtgttc 1860
 tcttctgaat tacatgaaaa caaatcttac atccacaga atgcaatcct tcacaacgga 1920
 actttagttc ttaaagagaa aacagaactc cacgtagtct cttaa 1965

<210> 341
 <211> 654

<212> PRT

<213> Chlamydia trachomatis

<400> 341

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
			20					25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Asp	Gln	Leu	Asn	Ile	Ser	Glu	Asn	Ser	Ala	Thr	Glu	Ile
145					150					155					160
Gly	Gly	Gly	Ile	Cys	Cys	Lys	Glu	Ser	Leu	Glu	Leu	Asp	Ala	Leu	Val
				165					170					175	
Ser	Leu	Ser	Val	Thr	Glu	Asn	Leu	Val	Gly	Lys	Glu	Gly	Gly	Gly	Leu
			180					185					190		
His	Ala	Lys	Thr	Val	Asn	Ile	Ser	Asn	Leu	Lys	Ser	Gly	Phe	Ser	Phe
		195					200					205			
Ser	Asn	Asn	Lys	Ala	Asn	Ser	Ser	Ser	Thr	Gly	Val	Ala	Thr	Thr	Ala
	210					215					220				
Ser	Ala	Pro	Ala	Ala	Ala	Ala	Ala	Ser	Leu	Gln	Ala	Ala	Ala	Ala	Ala
225					230					235					240
Ala	Pro	Ser	Ser	Pro	Ala	Thr	Pro	Thr	Tyr	Ser	Gly	Val	Val	Gly	Gly
				245					250					255	
Ala	Ile	Tyr	Gly	Glu	Lys	Val	Thr	Phe	Ser	Gln	Cys	Ser	Gly	Thr	Cys
			260					265					270		
Gln	Phe	Ser	Gly	Asn	Gln	Ala	Ile	Asp	Asn	Asn	Pro	Ser	Gln	Ser	Ser
		275					280					285			
Leu	Asn	Val	Gln	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Thr	Ser	Leu	Ser	Ile
	290					295					300				
Gly	Ser	Ser	Asp	Ala	Gly	Thr	Ser	Tyr	Ile	Phe	Ser	Gly	Asn	Ser	Val
305					310					315					320
Ser	Thr	Gly	Lys	Ser	Gln	Thr	Thr	Gly	Gln	Ile	Ala	Gly	Gly	Ala	Ile
				325					330					335	
Tyr	Ser	Pro	Thr	Val	Thr	Leu	Asn	Cys	Pro	Ala	Thr	Phe	Ser	Asn	Asn
			340					345					350		
Thr	Ala	Ser	Ile	Ala	Thr	Pro	Lys	Thr	Ser	Ser	Glu	Asp	Gly	Ser	Ser
		355					360					365			
Gly	Asn	Ser	Ile	Lys	Asp	Thr	Ile	Gly	Gly	Ala	Ile	Ala	Gly	Thr	Ala
	370					375					380				
Ile	Thr	Leu	Ser	Gly	Val	Ser	Arg	Phe	Ser	Gly	Asn	Thr	Ala	Asp	Leu
385					390					395					400
Gly	Ala	Ala	Ile	Gly	Thr	Leu	Ala	Asn	Ala	Asn	Thr	Pro	Ser	Ala	Thr
				405					410					415	
Ser	Gly	Ser	Gln	Asn	Ser	Ile	Thr	Glu	Lys	Ile	Thr	Leu	Glu	Asn	Gly

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 Thr Ser Thr His Asp Gly Ser Ala Ile Tyr Phe Thr Lys Asp Ala Thr
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 Thr Gln Ala Ser Ser Ala Thr Ser Gly Gln Asn Thr Asn Thr Ala Asn
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 Tyr Gly Ala Ala Ile Phe Gly Asp Pro Gly Thr Thr Gln Ser Ser Gln
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 545 550 555 560
 Phe Cys Ser Ile Ala Gly Tyr Val Lys Leu Ser Leu Gln Ala Ala Lys
 565 570 575
 Gly Lys Thr Ile Ser Phe Phe Asp Cys Val His Thr Ser Thr Lys Lys
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 Thr Gly Ser Thr Gln Asn Val Tyr Glu Thr Leu Asp Ile Asn Lys Glu
 595 600 605
 Glu Asn Ser Asn Pro Tyr Thr Gly Thr Ile Val Phe Ser Ser Glu Leu
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 625 630 635 640
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 645 650

<210> 342
 <211> 36
 <212> DNA
 <213> Chlamydia trachomatis

<400> 342
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36

<210> 343
 <211> 35
 <212> DNA
 <213> Chlamydia trachomatis

<400> 343
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35

<210> 344
 <211> 2103
 <212> DNA
 <213> Chlamydia trachomatis

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 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300

gcgcttaacg ggcacatcc cggtgacgtc atctcggtga cctggcacaac caagtcgggc 360
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ccatcacact ggcgccgct cggaactatt gtgttctctt ctgaattaca tgaaaacaaa 480
tcttacatcc cacagaatgc aatccttcac aacggaactt tagttcttaa agagaaaaca 540
gaactccacg tagtctcttt tgagcagaaa gaaggggtcta aattaattat ggaacccgga 600
gctgtgttat ctaacacaaa catagctaac ggagctctag ctatcaatgg gttaacgatt 660
gatctttcca gtatggggac tcctcaagca ggggaaatct tctctcctcc agaattacgt 720
atcgttgcca cgacctctag tgcattccgga ggaagcgggg tcagcagtag tataccaaca 780
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gcagaataca gtactcaact atatcttggg cccttctgga ctctctacgg aaactatact 2040
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taa 2103

<210> 345
<211> 700
<212> PRT
<213> Chlamydia trachomatis

<400> 345
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20 25 30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35 40 45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50 55 60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65 70 75 80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85 90 95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100 105 110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115 120 125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130 135 140
Arg Pro Leu Gly Thr Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys

145		150		155		160
Ser Tyr Ile Pro Gln Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu						
	165		170		175	
Lys Glu Lys Thr Glu Leu His Val Val Ser Phe Glu Gln Lys Glu Gly						
	180		185		190	
Ser Lys Leu Ile Met Glu Pro Gly Ala Val Leu Ser Asn Gln Asn Ile						
	195		200		205	
Ala Asn Gly Ala Leu Ala Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser						
	210		215		220	
Met Gly Thr Pro Gln Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg						
	225		230		235	
Ile Val Ala Thr Thr Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser						
	245		250		255	
Ser Ile Pro Thr Asn Pro Lys Arg Ile Ser Ala Ala Val Pro Ser Gly						
	260		265		270	
Ser Ala Ala Thr Thr Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr						
	275		280		285	
Gly Asp Leu Thr Leu Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro						
	290		295		300	
Met Leu Gly Ser Asp Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn						
	305		310		315	
Thr Ser Asp Val Gln Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe						
	325		330		335	
Pro Gln Lys Gly Tyr Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln						
	340		345		350	
Thr Gly Lys Leu Gln Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp						
	355		360		365	
Val Tyr Ile Pro Arg Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly						
	370		375		380	
Ser Gln Asn Ser Met Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met						
	385		390		395	
Leu Asn Asn Ala Arg Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val						
	405		410		415	
Ser Gly Val Gly Thr Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu						
	420		425		430	
Glu Phe Ser Tyr Tyr Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys						
	435		440		445	
Pro Arg Gln Asp Phe Ile Leu Gly Ala Ala Phe Ser Lys Ile Val Gly						
	450		455		460	
Lys Thr Lys Ala Ile Lys Lys Met His Asn Tyr Phe His Lys Gly Ser						
	465		470		475	
Glu Tyr Ser Tyr Gln Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe						
	485		490		495	
Leu Leu Asn Lys Gln His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly						
	500		505		510	
Val Val Ser Tyr Gly His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro						
	515		520		525	
Ser Ile His Glu Arg Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu						
	530		535		540	
Ala Asp Leu Arg Ile Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser						
	545		550		555	
Ser Lys Arg Ile Thr Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg						
	565		570		575	
Gln Lys Gln Phe Thr Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp						
	580		585		590	
Cys Ala Tyr Arg Asn Leu Ser Leu Pro Val Gly Cys Ala Val Glu Gly						
	595		600		605	

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Ala Ile Met Asn Cys Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala
 610 615 620
 Tyr Met Pro Ser Ile Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val
 625 630 635 640
 Leu Ser Ser Asn Glu Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg
 645 650 655
 Thr Ser Ala Arg Ala Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe
 660 665 670
 Trp Thr Leu Tyr Gly Asn Tyr Thr Ile Asp Val Gly Met Tyr Thr Leu
 675 680 685
 Ser Gln Met Thr Ser Cys Gly Ala Arg Met Ile Phe
 690 695 700

<210> 346

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 346

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37

<210> 347

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 347

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37

<210> 348

<211> 1464

<212> DNA

<213> Chlamydia trachomatis

<400> 348

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accgttcata	tcgggcctac	cgcccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	catgaaattt	atgtcagcta	ctgctgtatt	tgctgcagta	480
ctctcctccg	ttactgaggc	gagctcgatc	caagatcaaa	taaagaatac	cgactgcaat	540
gttagcaaaag	taggatattc	aacttctcaa	gcattttactg	atatgatgct	agcagacaac	600
acagagtatc	gagctgctga	tagtgtttca	ttctatgact	tttcgacatc	ttccggatta	660
cctagaaaac	atcttagtag	tagtagtgaa	gcttctccaa	cgacagaagg	agtgtcttca	720
tcttcatctg	gagaaaatac	tgagaattca	caagattcag	ctccctcttc	tggagaaact	780
gataagaaaa	cagaagaaga	actagacaat	ggcgggaatca	tttatgctag	agagaaacta	840
actatctcag	aatctcagga	ctctctctct	aatccaagca	tagaactcca	tgacaatagt	900
tttttcttcg	gagaagggtga	agttatcttt	gatcacagag	ttgccctcaa	aaacggagga	960
gctattttatg	gagagaaaga	ggtagtcttt	gaaaacataa	aatctctact	agtagaagta	1020
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gttaccgaag	caaccttctc	ctccaatggt	ggggaacaag	gtgggtgggtg	aatctattca	1140
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gcaacagcag	taaaacaatg	tctggatgaa	gaaatgatcg	tattgctcac	agaatgcgtt	1260
gatagcttat	ccgaagatac	actggatagc	actccagaaa	cggaacagac	taagtcaaat	1320

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069-111-04-201

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			20					25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Met	Lys	Phe	Met	Ser	Ala	Thr	Ala	Val	Phe	Ala	Ala	Val
145					150					155					160
Leu	Ser	Ser	Val	Thr	Glu	Ala	Ser	Ser	Ile	Gln	Asp	Gln	Ile	Lys	Asn
				165					170					175	
Thr	Asp	Cys	Asn	Val	Ser	Lys	Val	Gly	Tyr	Ser	Thr	Ser	Gln	Ala	Phe
			180					185					190		
Thr	Asp	Met	Met	Leu	Ala	Asp	Asn	Thr	Glu	Tyr	Arg	Ala	Ala	Asp	Ser
		195					200					205			
Val	Ser	Phe	Tyr	Asp	Phe	Ser	Thr	Ser	Ser	Gly	Leu	Pro	Arg	Lys	His
	210					215					220				
Leu	Ser	Ser	Ser	Ser	Glu	Ala	Ser	Pro	Thr	Thr	Glu	Gly	Val	Ser	Ser
225					230					235					240
Ser	Ser	Ser	Gly	Glu	Asn	Thr	Glu	Asn	Ser	Gln	Asp	Ser	Ala	Pro	Ser
				245					250					255	
Ser	Gly	Glu	Thr	Asp	Lys	Lys	Thr	Glu	Glu	Glu	Leu	Asp	Asn	Gly	Gly
			260					265					270		
Ile	Ile	Tyr	Ala	Arg	Glu	Lys	Leu	Thr	Ile	Ser	Glu	Ser	Gln	Asp	Ser
		275					280					285			
Leu	Ser	Asn	Pro	Ser	Ile	Glu	Leu	His	Asp	Asn	Ser	Phe	Phe	Phe	Gly
	290					295				300					
Glu	Gly	Glu	Val	Ile	Phe	Asp	His	Arg	Val	Ala	Leu	Lys	Asn	Gly	Gly
305					310					315					320
Ala	Ile	Tyr	Gly	Glu	Lys	Glu	Val	Val	Phe	Glu	Asn	Ile	Lys	Ser	Leu
				325					330					335	
Leu	Val	Glu	Val	Asn	Ile	Ser	Val	Glu	Lys	Gly	Gly	Ser	Val	Tyr	Ala
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<210> 350
<211> 37
<212> DNA
<213> Chlamydia trachomatis
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37

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<213> Chlamydia trachomatis
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37

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<210> 352
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accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac		180
ggcgcacgag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc		240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac		300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc		360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat		420
ccatcacact	ggcggccgct	cgatacaca	gtatcagaat	caccagaatc	aactcctagc		480
cccgcagatg	tttttaggtaa	aggtggtggt	atctatacag	aaaaatcttt	gaccatcact		540
ggaattacag	ggactataga	ttttgtcagt	aacatagcta	ccgattctgg	agcaggtgta		600
ttcactaaag	aaaacttgtc	ttgcaccaac	acgaatagcc	tacagttttt	gaaaaactcg		660
gcaggtcaac	atggaggagg	agcctacgtt	actcaaacca	tgtctgttac	taatacaact		720
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actctcacta	aaaactctgc	aaaggagtct	ggaggagcta	tttttacaga	tctagcgtct		900
ataccaacaa	cgataccccc	agagtcttct	acccctcttt	cctcctcgcc	tgcaagcact		960
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gccctctctc	taacagaggc	tgagtctgat	caaacggatc	aaacagaaac	ttctgatact		1080
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tctgcgaaaa	aaggaggggc	tatttacggg	aaaaaagcta	aactttcccg	tattaacaat	1200
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aacaatgagt	ctcaagacac	atcagatact	ggaaacgctg	aatctggaga	acaactacaa	1620
gattctacac	aatctaata	agaaaatacc	cttcccaata	gtagtattga	tcaatctaac	1680
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<211> 583

<212> PRT

<213> Chlamydia trachomatis

<400> 353

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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
		20						25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
	65				70					75				80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Asp	Thr	Gln	Val	Ser	Glu	Ser	Pro	Glu	Ser	Thr	Pro	Ser
	145				150					155				160	
Pro	Asp	Asp	Val	Leu	Gly	Lys	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Lys	Ser
				165					170					175	
Leu	Thr	Ile	Thr	Gly	Ile	Thr	Gly	Thr	Ile	Asp	Phe	Val	Ser	Asn	Ile
		180					185					190			
Ala	Thr	Asp	Ser	Gly	Ala	Gly	Val	Phe	Thr	Lys	Glu	Asn	Leu	Ser	Cys
		195					200					205			
Thr	Asn	Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln	His
	210					215					220				
Gly	Gly	Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr	Thr
	225				230					235				240	
Ser	Glu	Ser	Ile	Thr	Thr	Pro	Pro	Leu	Val	Gly	Glu	Val	Ile	Phe	Ser
				245					250					255	
Glu	Asn	Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys	Leu
			260				265						270		
Ser	Leu	Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala	Lys
		275					280					285			
Glu	Ser	Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro	Thr	Thr
	290					295					300				
Asp	Thr	Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser	Thr

L084133.042400

305 310 315 320
 Pro Glu Val Val Ala Ser Ala Lys Ile Asn Arg Phe Phe Ala Ser Thr
 325 330 335
 Ala Glu Pro Ala Ala Pro Ser Leu Thr Glu Ala Glu Ser Asp Gln Thr
 340 345 350
 Asp Gln Thr Glu Thr Ser Asp Thr Asn Ser Asp Ile Asp Val Ser Ile
 355 360 365
 Glu Asn Ile Leu Asn Val Ala Ile Asn Gln Asn Thr Ser Ala Lys Lys
 370 375 380
 Gly Gly Ala Ile Tyr Gly Lys Lys Ala Lys Leu Ser Arg Ile Asn Asn
 385 390 395 400
 Leu Glu Leu Ser Gly Asn Ser Ser Gln Asp Val Gly Gly Gly Leu Cys
 405 410 415
 Leu Thr Glu Ser Val Glu Phe Asp Ala Ile Gly Ser Leu Leu Ser His
 420 425 430
 Tyr Asn Ser Ala Ala Lys Glu Gly Val Ile His Ser Lys Thr Val
 435 440 445
 Thr Leu Ser Asn Leu Lys Ser Thr Phe Thr Phe Ala Asp Asn Thr Val
 450 455 460
 Lys Ala Ile Val Glu Ser Thr Pro Glu Ala Pro Glu Glu Ile Pro Pro
 465 470 475 480
 Val Glu Gly Glu Glu Ser Thr Ala Thr Glu Asn Pro Asn Ser Asn Thr
 485 490 495
 Glu Gly Ser Ser Ala Asn Thr Asn Leu Glu Gly Ser Gln Gly Asp Thr
 500 505 510
 Ala Asp Thr Gly Thr Gly Val Val Asn Asn Glu Ser Gln Asp Thr Ser
 515 520 525
 Asp Thr Gly Asn Ala Glu Ser Gly Glu Gln Leu Gln Asp Ser Thr Gln
 530 535 540
 Ser Asn Glu Glu Asn Thr Leu Pro Asn Ser Ser Ile Asp Gln Ser Asn
 545 550 555 560
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 565 570 575
 Glu Ser Val Ser Ser Ser Ser
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<210> 354
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 <212> DNA
 <213> Chlamydia trachomatis

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39

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 <212> DNA
 <213> Chlamydia trachomatis

<400> 355
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36

<210> 356
 <211> 2052
 <212> DNA
 <213> Chlamydia trachomatis

<400> 356
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accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
ggcgacacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
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gcgcttaacg ggcatcatcc cggtgacgtc atctcgggtga cctggcaaac caagtcgggc 360
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ccatcacact ggcgccgct cgatcaatct aacgaaaaca cagacgaatc atctgatagc 480
cacactgagg aaataactga cgagagtgtc tcatcgctct ctaaaagtgg atcatctact 540
cctcaagatg gaggagcagc ttcttcaggg gctccctcag gagatcaatc tatctctgca 600
aacgcttggt tagctaaaag ctatgctgcg agtactgata gctcccctgt atctaattct 660
tcaggttcag acgttactgc atcttctgat aatccagact ctctctcatc tggagatagc 720
gctggagact ctgaaggacc gactgagcca gaagctgggt ctacaacaga aactcctact 780
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ttctcctctg aattacatga aaataaatcc tatattccac aaaacgtagt tctacacagt 1920
ggatctcttg tattgaagcc aaataccgag cttcatgtca tttcttttga gcagaaagaa 1980
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<212> PRT
<213> Chlamydia trachomatis

<400> 357
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Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35 40 45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50 55 60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65 70 75 80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85 90 95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100 105 110

Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
		130				135					140				
Arg	Pro	Leu	Asp	Gln	Ser	Asn	Glu	Asn	Thr	Asp	Glu	Ser	Ser	Asp	Ser
145					150					155					160
His	Thr	Glu	Glu	Ile	Thr	Asp	Glu	Ser	Val	Ser	Ser	Ser	Ser	Lys	Ser
				165					170					175	
Gly	Ser	Ser	Thr	Pro	Gln	Asp	Gly	Gly	Ala	Ala	Ser	Ser	Gly	Ala	Pro
			180					185					190		
Ser	Gly	Asp	Gln	Ser	Ile	Ser	Ala	Asn	Ala	Cys	Leu	Ala	Lys	Ser	Tyr
		195					200					205			
Ala	Ala	Ser	Thr	Asp	Ser	Ser	Pro	Val	Ser	Asn	Ser	Ser	Gly	Ser	Asp
		210				215					220				
Val	Thr	Ala	Ser	Ser	Asp	Asn	Pro	Asp	Ser	Ser	Ser	Ser	Gly	Asp	Ser
225					230					235					240
Ala	Gly	Asp	Ser	Glu	Gly	Pro	Thr	Glu	Pro	Glu	Ala	Gly	Ser	Thr	Thr
				245					250					255	
Glu	Thr	Pro	Thr	Leu	Ile	Gly	Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Thr	Val
			260					265					270		
Lys	Ile	Glu	Asn	Phe	Ser	Gly	Gln	Gly	Ile	Phe	Ser	Gly	Asn	Lys	Ala
		275					280					285			
Ile	Asp	Asn	Thr	Thr	Glu	Gly	Ser	Ser	Ser	Lys	Ser	Asn	Val	Leu	Gly
		290				295					300				
Gly	Ala	Val	Tyr	Ala	Lys	Thr	Leu	Phe	Asn	Leu	Asp	Ser	Gly	Ser	Ser
305					310					315					320
Arg	Arg	Thr	Val	Thr	Phe	Ser	Gly	Asn	Thr	Val	Ser	Ser	Gln	Ser	Thr
				325					330					335	
Thr	Gly	Gln	Val	Ala	Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr	Ile
			340					345					350		
Ala	Thr	Pro	Val	Val	Phe	Ser	Lys	Asn	Ser	Ala	Thr	Asn	Asn	Ala	Asn
		355					360					365			
Asn	Ala	Thr	Asp	Thr	Gln	Arg	Lys	Asp	Thr	Phe	Gly	Gly	Ala	Ile	Gly
		370				375					380				
Ala	Thr	Ser	Ala	Val	Ser	Leu	Ser	Gly	Gly	Ala	His	Phe	Leu	Glu	Asn
385					390					395					400
Val	Ala	Asp	Leu	Gly	Ser	Ala	Ile	Gly	Leu	Val	Pro	Asp	Thr	Gln	Asn
				405					410					415	
Thr	Glu	Thr	Val	Lys	Leu	Glu	Ser	Gly	Ser	Tyr	Tyr	Phe	Glu	Lys	Asn
			420					425					430		
Lys	Ala	Leu	Lys	Arg	Ala	Thr	Ile	Tyr	Ala	Pro	Val	Val	Ser	Ile	Lys
		435					440					445			
Ala	Tyr	Thr	Ala	Thr	Phe	Asn	Gln	Asn	Arg	Ser	Leu	Glu	Glu	Gly	Ser
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Ala	Ile	Tyr	Phe												

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<210> 358
<211> 1248
<212> DNA
<213> Chlamydia
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<210> 359
<211> 1311
<212> DNA
<213> Chlamydia
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gatgatcctc	gctctctttc	tccagaaaaa	ggagaaaatg	ctttccattt	ttctttgtcc	180
aaggctttat	ttgttactct	cttcagagaa	gagctctctg	gattaaaccc	tgccttggtc	240
tcctcctatc	aagttctcga	agacggcg	ttttatcggt	tttgtattcg	taagaatgct	300
aagtggagtq	acgqctctct	tttacttgca	qaagatgtaa	taqctgcttg	qqaacacact	360

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aaacaagctg ggcgatattc cctacttttt gaaaagctat cttttcgagc ctcttcttct 420
tcggaaatcc ttattgaact caaagaaccc gagcctcaac tattggcgat attagcctct 480
ccgttttttg ctgtgtatcg tccagaaaat ccttttcttt cttctggacc ttttatgcc 540
aaaacctatg tgcaagggca aacgctcggt ctacaaaaaa acccttatta ctatgaccat 600
gcgcatgtgg aattacattc catagacttt cgcatcattc ccaacattta cacagctcta 660
cacctcttaa gaagagggtg cgtggattgg gtggggcagc cttggcacca agggattcct 720
tttgagcttc ggactacctc tgctctctac acccattacc ctgtagatgg cacattctgg 780
cttattctta atcccaaaga tccgtgactt tcctctctat ctaatcgta gcgattgatt 840
gctgccatcc aaaaggaaaa actgggtgaag caagcttttag gaacacaata tcgagtagct 900
gaaagctctc catctccaga gggaatcata gctcatcaag aagcttctac tccttttct 960
gggaaaatta ctttgatata tcccaataat attacgcgct gtcagcggtt ggccgaggta 1020
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gtatttggtc aaaaacgagc cactcaagat ttctctgtct ccacagcaac ttctatagct 1140
ttccatcccc ttgctaaatc taagtctgat caaacggctc tagacaattt cacttgctctg 1200
cccttgtagc acatagaata tgattatatt ttgagcagac cgctagatca aattgttcac 1260
tatecttcag gtagtggtga tttgacctat gcacactttc actaggaatt c 1311

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<210> 360

<211> 813

<212> DNA

<213> Chlamydia

<400> 360

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atccttgagg caacatcaac acctgtcgca gccaaaatga cagcttctga tggaatatct 180
ttaacagtct ccaataatcc atcaaccaat cgttctatta caattgggtt ggatgcgga 240
aaagcttacc agcttattct agaaaagttg ggagatcaaa ttcttgggtg aattgctgat 300
actattgttg atagtacagt ccaagatatt ttagacaaaa tcacaacaga cccttctcta 360
ggtttgttga aagcttttaa caactttcca atcactaata aaattcaatg caacgggtta 420
ttcactccca ggaacattga aactttatta ggaggaaactg aaataggaaa attcacagtc 480
acacccaaaa gctctgggag catgttctta gtctcagcag atattattgc atcaagaatg 540
gaaggcggtg ttgttctagc tttggtagca gaaggtgatt ctaagcccta cgcgattagt 600
tatggatact catcaggcgt tcctaattta tgtagtctaa gaaccagaat tattaatata 660
ggattgactc cgacaacgta ttcatatcgt gtaggcgggt tagaaagcgg tgtgggtatg 720
gttaatgccc tttctaattg caatgatatt ttaggaataa caaatacttc taatgtatct 780
tttttgagg taatacctca aacaaacgct taa 813

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<210> 361

<211> 750

<212> DNA

<213> Chlamydia

<400> 361

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gattcgcttc aagagatctt gcaagaggct ttgccgcctc tgcaagaacg gagtgtggta 120
gttgctctct caaagattgt gagtttatgt gaaggcgctg tcgctgatgc aagaatgtgc 180
aaagcagagt tgataaaaaa agaagcggat gcttatttgt tttgtgagaa aagcgggata 240
tatctaacga aaaaagaagg tattttgatt ccttctgcag ggattgatga atcgaatacg 300
gaccagcctt ttgttttata tcctaagat attttggat cgtgtaatcg catcgagaa 360
tggttaagaa attattttcg agtgaaagag ctaggcgtaa tcattacaga tagccatact 420
actccaatgc ggcgtggagt actgggtatc gggctgtgtt ggtatggatt ttctccatta 480
cacaactata taggatcgct agattgtttc ggtcgtccct tacagatgac gcaaagtaat 540
ctttagatag ccttagcagt tgcggctgtt gtttgtagtg gagaggggaa tgagcaaaaa 600
ccgttagcgg tgatagagca ggcacctaat atggtctacc attcatatcc tacttctcga 660
gaagagtatt gttcttttgc catagatgaa acagaggact tatacggacc ttttttgcaa 720
gcggttacgt ggagtcaaga aaagaaatag 750

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09-11-07-04301

Met	His	His	His	His	His	His	Pro	Pro	Glu	Ser	Gly	Leu	Ile	Ile	Ala
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Ile	His	Asp	Asp	Pro	Arg	Ser	Leu	Ser	Pro	Glu	Lys	Gly	Glu	Asn	Ala
			20					25					30		
Phe	His	Phe	Ser	Leu	Ser	Lys	Ala	Leu	Phe	Ala	Thr	Leu	Phe	Arg	Glu
		35					40					45			
Glu	Leu	Ser	Gly	Leu	Thr	Pro	Ala	Leu	Val	Ser	Ser	Tyr	Gln	Val	Ser
	50					55					60				
Glu	Asp	Gly	Arg	Phe	Tyr	Arg	Phe	Cys	Ile	Arg	Lys	Asp	Ala	Lys	Trp
	65				70					75					80
Ser	Asp	Gly	Ser	Leu	Leu	Leu	Ala	Glu	Asp	Val	Ile	Ala	Ala	Trp	Glu
				85					90					95	
His	Thr	Lys	Gln	Ala	Gly	Arg	Tyr	Ser	Leu	Leu	Phe	Glu	Lys	Leu	Ser
			100					105					110		
Phe	Arg	Ala	Ser	Ser	Ser	Ser	Glu	Ile	Leu	Ile	Glu	Leu	Lys	Glu	Pro
		115					120					125			
Glu	Pro	Gln	Leu	Leu	Ala	Ile	Leu	Ala	Ser	Pro	Phe	Phe	Ala	Val	Tyr
	130					135					140				
Arg	Pro	Glu	Asn	Pro	Phe	Leu	Ser	Ser	Gly	Pro	Phe	Met	Pro	Lys	Thr
145					150				155						160
Tyr	Val	Gln	Gly	Gln	Thr	Leu	Val	Leu	Gln	Lys	Asn	Pro	Tyr	Tyr	Tyr
				165					170					175	
Asp	His	Ala	His	Val	Glu	Leu	His	Ser	Ile	Asp	Phe	Arg	Ile	Ile	Pro
			180					185					190		
Asn	Ile	Tyr	Thr	Ala	Leu	His	Leu	Leu	Arg	Arg	Gly	Asp	Val	Asp	Trp
		195					200					205			
Val	Gly	Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Phe	Glu	Leu	Arg	Thr	Thr
	210					215					220				
Ser	Ala	Leu	Tyr	Thr	His	Tyr	Pro	Val	Asp	Gly	Thr	Phe	Trp	Leu	Ile
225					230				235						240
Leu	Asn	Pro	Lys	Asp	Pro	Val	Leu	Ser	Ser	Leu	Ser	Asn	Arg	Gln	Arg
				245					250					255	
Leu	Ile	Ala	Ala	Ile	Gln	Lys	Glu	Lys	Leu	Val	Lys	Gln	Ala	Leu	Gly
			260					265					270		
Thr	Gln	Tyr	Arg	Val	Ala	Glu	Ser	Ser	Pro	Ser	Pro	Glu	Gly	Ile	Ile
		275					280					285			
Ala	His	Gln	Glu	Ala	Ser	Thr	Pro	Phe	Pro	Gly	Lys	Ile	Thr	Leu	Ile
	290					295					300				
Tyr	Pro	Asn	Asn	Ile	Thr	Arg	Cys	Gln	Arg	Leu	Ala	Glu	Val	Leu	Gln
305					310					315					320
Glu	Gln	Cys	Arg	Asp	Ala	Gly	Ile	Gln	Leu	Thr	Leu	Glu	Gly	Leu	Glu
				325					330					335	
Tyr	His	Val	Phe	Val	Gln	Lys	Arg	Ala	Thr	Gln	Asp	Phe	Ser	Val	Ser
			340					345					350		
Thr	Ala	Thr	Ser	Ile	Ala	Phe</									

370 375 380
 Lys Ser Lys Phe Asp Gln Thr Ala Leu Asp Asn Phe Thr Cys Leu Pro
 385 390 395 400
 Leu Tyr His Ile Glu Tyr Asp Tyr Ile Leu Ser Arg Pro Leu Asp Gln
 405 410 415
 Ile Val His Tyr Pro Ser Gly Ser Val Asp Leu Thr Tyr Ala His Phe
 420 425 430
 His

<210> 364
 <211> 264
 <212> PRT
 <213> Chlamydia

<400> 364
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 Gln Ile Ile Leu Gly Thr Thr Ser Thr Pro Val Ala Ala Lys Met Thr
 35 40 45
 Ala Ser Asp Gly Ile Ser Leu Thr Val Ser Asn Asn Pro Ser Thr Asn
 50 55 60
 Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu Lys Ala Tyr Gln Leu Ile
 65 70 75 80
 Leu Glu Lys Leu Gly Asp Gln Ile Leu Gly Gly Ile Ala Asp Thr Ile
 85 90 95
 Val Asp Ser Thr Val Gln Asp Ile Leu Asp Lys Ile Thr Thr Asp Pro
 100 105 110
 Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn Phe Pro Ile Thr Asn Lys
 115 120 125
 Ile Gln Cys Asn Gly Leu Phe Thr Pro Arg Asn Ile Glu Thr Leu Leu
 130 135 140
 Gly Gly Thr Glu Ile Gly Lys Phe Thr Val Thr Pro Lys Ser Ser Gly
 145 150 155 160
 Ser Met Phe Leu Val Ser Ala Asp Ile Ile Ala Ser Arg Met Glu Gly
 165 170 175
 Gly Val Val Leu Ala Leu Val Arg Glu Gly Asp Ser Lys Pro Tyr Ala
 180 185 190
 Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro Asn Leu Cys Ser Leu Arg
 195 200 205
 Thr Arg Ile Ile Asn Thr Gly Leu Thr Pro Thr Thr Tyr Ser Leu Arg
 210 215 220
 Val Gly Gly Leu Glu Ser Gly Val Val Trp Val Asn Ala Leu Ser Asn
 225 230 235 240
 Gly Asn Asp Ile Leu Gly Ile Thr Asn Thr Ser Asn Val Ser Phe Leu
 245 250 255
 Glu Val Ile Pro Gln Thr Asn Ala
 260

<210> 365
 <211> 249
 <212> PRT
 <213> Chlamydia

F02440-23-04360

Met	His	His	His	His	His	His	Lys	Ile	Thr	Pro	Ile	Lys	Thr	Arg	Lys
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Pro	Leu	Gln	Glu	Arg	Ser	Val	Val	Val	Val	Ser	Ser	Lys	Ile	Val	Ser
Leu	Cys	Glu	Gly	Ala	Val	Ala	Asp	Ala	Arg	Met	Cys	Lys	Ala	Glu	Leu
Ile	Lys	Lys	Glu	Ala	Asp	Ala	Tyr	Leu	Phe	Cys	Glu	Lys	Ser	Gly	Ile
Tyr	Leu	Thr	Lys	Lys	Glu	Gly	Ile	Leu	Ile	Pro	Ser	Ala	Gly	Ile	Asp
Glu	Ser	Asn	Thr	Asp	Gln	Pro	Phe	Val	Leu	Tyr	Pro	Lys	Asp	Ile	Leu
Gly	Ser	Cys	Asn	Arg	Ile	Gly	Glu	Trp	Leu	Arg	Asn	Tyr	Phe	Arg	Val
Lys	Glu	Leu	Gly	Val	Ile	Ile	Thr	Asp	Ser	His	Thr	Thr	Pro	Met	Arg
Arg	Gly	Val	Leu	Gly	Ile	Gly	Leu	Cys	Trp	Tyr	Gly	Phe	Ser	Pro	Leu
His	Asn	Tyr	Ile	Gly	Ser	Leu	Asp	Cys	Phe	Gly	Arg	Pro	Leu	Gln	Met
Thr	Gln	Ser	Asn	Leu	Val	Asp	Ala	Leu	Ala	Val	Ala	Ala	Val	Val	Cys
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Pro	Asn	Met	Val	Tyr	His	Ser	Tyr	Pro	Thr	Ser	Arg	Glu	Glu	Tyr	Cys
Ser	Leu	Arg	Ile	Asp	Glu	Thr	Glu	Asp	Leu	Tyr	Gly	Pro	Phe	Leu	Gln
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<213> Chlamydia pneumoniae

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<211> 888
<212> DNA
<213> Chlamydia pneumoniae

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<211> 237
<212> DNA
<213> Chlamydia pneumoniae

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<400> 368

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 atcggaaga tcattggcaa agaaggccgt acgatcaaag cgattcgtac tcttctggtt 180
 tctgtagcaa gcaggaacaa tgtaagggtc agtttagaaa ttatggaaga aaagtag 237

<210> 369

<211> 1437

<212> DNA

<213> Chlamydia pneumoniae

<400> 369

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<210> 370

<211> 774

<212> DNA

<213> Chlamydia pneumoniae

<400> 370

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<210> 371

<211> 576
 <212> DNA
 <213> Chlamydia pneumoniae

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 <211> 699
 <212> DNA
 <213> Chlamydia pneumoniae

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 <212> DNA
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 ttgatcgcca tcattcttta tcgaggtcag agacatagac tttctttacc agtaagagga 300
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 aagaaataa 369

<210> 374
 <211> 5172
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 374
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<210> 375

<211> 5172

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 375

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<213> Chlamydia pneumoniae

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<211> 1995

<213> Chlamydia pneumoniae

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aaagaagaga	tgatcatcta	tgagatgcat	gtacgttctc	tcacgcaatc	ttcttcattc	480
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<210> 382
<211> 987
<212> DNA
<213> Chlamydia pneumoniae

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<400> 382
atggcattca aagagggtcgt tcgtgttgct gtcacaggag gcaaaggga gattgcgtat 60
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cgatctatg atgtgccggg tacagagaga gctctctcag ggtgctgat ggagctcgat 180
gacggtgcat atcctctttt acatcgtctg cgtgtgacga catcgtaaa cgacgctttt 240
gatggtatcg atgcggcgtt tctgataggt gctgtgcctc gtggaccgg tatggagcga 300
ggagatcttt taaagcaaaa tggtcagatc ttttcgttac agggggccgc tttaaataca 360
gcagcaaaaa gagatgctaa gatttttgtt gtagggaacc ctgtcaatac gaattgctgg 420
attgctatga aacatgctcc cagattgcat cggaaaaatt tccatgcgat gttacgcttg 480
gatcagaatc gcatgcatag catgctcgt catcgtgctg aggttcctct agaggaggtc 540
tcccggtgtt tcatctgggg aaatcattct gcaaagcagg ttcctgactt cacacaagca 600
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ttgccttggg agccttttat cagaaataag attcaaattt ccctggatga aattgctcag 960
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<210> 383
<211> 654
<212> DNA
<213> Chlamydia pneumoniae

```

```

<400> 383
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caagagtctg ttatactgaa ggaaaaccgt gaaacacctt ctcttgtaa gagactctct 180
cgctgttctc gaagactctt cgctcgacgt gatcaaactc agaaggatac gctgcaagtg 240
caagctaact ttaagacctc cgcagaaaag atttcagagc aggacgaaag agacctttct 300
ttcgttgtct cgtctgctgc agaaaagtct tcaatttcgt tagctttgtc tcagggtgaa 360
attaaggatg ctttgtaccg tatccgagaa gtccaccctc tagctttaat agaagctctt 420
gctgaaaacc ctgccttgat agaagggatg aaaaagatgc aaggccgtga ttggatttgg 480

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aatcttttct taacacaatt aagtgaagta ttttctcaag cttggtctca aggggttattc 540
 tctgaagaag atatcgccgc atttgcctcc accttaggtt tggactccgg gaccgttgcg 600
 tccattgtcc aaggggaaag gtggcccagag cttgtggata tagtgataac ttaa 654

<210> 384

<211> 813

<212> DNA

<213> Chlamydia pneumoniae

<400> 384

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 tgtgttctta cattttgttg gttatttctc cctgaactgt ctttatctaa attcaatcct 180
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 gggaaaccgat ctaatacggt atgcaatctc gaggggagct gctttcttgg tcaaccgtac 480
 ttccctctct tgaatctccc tcagattttt ttctctcaag aagatttaaa aatgcaaaaa 540
 ctccctaag aaaaaatgct ttttaccag attcttctta aggagcttgc tatggagtct 600
 ccgaaaatca ttgatttatc tttatctgat gcataccctg gagaaattat agtgacgctc 660
 tcttcaggca gtctgttaag acttccaatt aagaccttag atcgtgcctt agacctgtat 720
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 tttccaaatt tcttattatt aaaagctcta tga 813

<210> 385

<211> 1956

<212> DNA

<213> Chlamydia pneumoniae

<400> 385

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 gtcactaata taaaggatac agcggctact gatgaggaaa ccgcaatcgc tgcggagtgg 480
 gaaactaaga atgccgatgc agttaaggtt ggcgcgcaaa ttacagaatt agcgaaatat 540
 gcttcggata accaagcgat tcttgactct ttaggtaaac tgacttccct cgacctctta 600
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<210> 386
<211> 805
<212> PRT
<213> Chlamydia pneumoniae
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<400>	386															
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Glu	Gly	Leu	Gln	Ala	Val	Arg	Glu	Arg	Pro	Gly	Met	Tyr	Ile	Gly	Asp	
			20					25					30			
Thr	Gly	Ile	Thr	Gly	Leu	His	His	Leu	Val	Tyr	Glu	Val	Val	Asp	Asn	
		35					40					45				
Ser	Ile	Asp	Glu	Ala	Met	Ala	Gly	Tyr	Cys	Ser	Arg	Ile	Asp	Val	Arg	
	50					55					60					
Ile	Leu	Glu	Asp	Gly	Gly	Ile	Val	Ile	Val	Asp	Asn	Gly	Arg	Gly	Ile	
65					70					75					80	
Pro	Ile	Glu	Val	His	Glu	Arg	Glu	Ser	Ala	Lys	Gln	Gly	Arg	Glu	Val	
				85					90					95		
Ser	Ala	Leu	Glu	Val	Val	Leu	Thr	Val	Leu	His	Ala	Gly	Gly	Lys	Phe	
			100					105					110			
Asp	Lys	Asp	Ser	Tyr	Lys	Val	Ser	Gly	Gly	Leu	His	Gly	Val	Gly	Val	
		115					120					125				
Ser	Cys	Val	Asn	Ala	Leu	Ser	Glu	Lys	Leu	Val	Ala	Thr	Val	Phe	Lys	
	130					135					140					
Asp	Lys	Lys	Cys	Tyr	Gln	Met	Glu	Phe	Ser	Arg	Gly	Ile	Pro	Val	Thr	
145					150					155					160	
Pro	Leu	Gln	Tyr	Val	Ser	Val	Ser	Asp	Arg	Gln	Gly	Thr	Glu	Ile	Val	
				165					170					175		
Phe	Tyr	Pro	Asp	Pro	Lys	Ile	Phe	Ser	Thr	Cys	Thr	Phe	Asp	Arg	Ser	
			180					185					190			
Ile	Leu	Met	Lys	Arg	Leu	Arg	Glu	Leu	Ala	Phe	Leu	Asn	Arg	Gly	Ile	
		195					200					205				
Thr	Ile	Val	Phe	Glu	Asp	Asp	Arg	Asp	Val	Ser	Phe	Asp	Lys	Val	Thr	
	210					215					220					

Phe Phe Tyr Glu Gly Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn Gln
 225 230 235 240
 Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr Arg
 245 250 255
 Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Trp Asn
 260 265 270
 Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro Thr
 275 280 285
 Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr Arg
 290 295 300
 Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn Lys
 305 310 315 320
 Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val Ile
 325 330 335
 Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln Lys
 340 345 350
 Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly Glu
 355 360 365
 Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met Ile
 370 375 380
 Val Asp Lys Val Phe Val Ala Ala Gln Ala Arg Glu Ala Ala Lys Lys
 385 390 395 400
 Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg Leu
 405 410 415
 Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys Glu
 420 425 430
 Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln Gly
 435 440 445
 Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile Leu
 450 455 460
 Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu Ile
 465 470 475 480
 Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn Phe
 485 490 495
 Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp Ala
 500 505 510
 Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe Tyr
 515 520 525

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Arg His Met Thr Ala Leu Ile Glu Asn Glu Cys Val Tyr Ile Ala Gln
 530 535 540
 Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile Leu
 545 550 555 560
 Ser Glu Lys Glu Met Asp Ser Tyr Leu Leu Met Leu Gly Thr Asn Glu
 565 570 575
 Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu Ala
 580 585 590
 Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile Asn
 595 600 605
 Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met Tyr
 610 615 620
 Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr Gly
 625 630 635 640
 Met Gln Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Glu Ala
 645 650 655
 Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr Lys
 660 665 670
 Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly Leu
 675 680 685
 Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile Gly
 690 695 700
 Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu Glu
 705 710 715 720
 Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile Gln
 725 730 735
 Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp Thr
 740 745 750
 Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys Asp
 755 760 765
 Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu Val
 770 775 780
 Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg Ile
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 Asn Asn Leu Asp Ile
 805

<210> 387

<211> 295

<212> PRT

<213> Chlamydia pneumoniae

<400> 387

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Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr His Gln
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      20                      25                      30

Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly Arg Tyr Tyr Lys Tyr
      35                      40                      45

Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro Tyr Leu Leu Gly Cys
      50                      55                      60

Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser Ser Asn Leu Leu Tyr
      65                      70                      75                      80

Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile Leu Gln Asp Cys Met
      85                      90                      95

Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser Gly Ala Pro Tyr Gly
      100                     105                     110

Asp His Tyr Tyr Arg Phe Ser Pro Thr Pro Ile Ala Gln Asp Leu His
      115                     120                     125

Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala Lys Glu Arg Glu Ile
      130                     135                     140

Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr Ala Phe Pro Ser Phe
      145                     150                     155                     160

Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu Val Ile Arg Ile Gln
      165                     170                     175

Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser Val Ala Thr Met Thr
      180                     185                     190

Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala Ile Leu Phe Leu Thr
      195                     200                     205

Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp Arg Val Val Asn Ile
      210                     215                     220

Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala Ser Gly Asp Asp Ala
      225                     230                     235                     240

Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe Lys Ile Val Met Ser
      245                     250                     255

Ser Ala Pro Glu Glu Met His Val His Ala Asp Phe Leu Ala Pro Pro
      260                     265                     270

Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu Ala Gly Val Arg Tyr
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0904133042301

Tyr Asp Asp Leu Met Ser Leu
290 295

<210> 388

<211> 78

<212> PRT

<213> Chlamydia pneumoniae

<400> 388

Met Lys Glu Phe Leu Ala Tyr Ile Ile Lys Asn Leu Val Asp Arg Pro
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Glu Glu Val Arg Ile Lys Glu Val Gln Gly Thr His Thr Ile Ile Tyr
20 25 30

Glu Leu Ser Val Ala Lys Pro Asp Ile Gly Lys Ile Ile Gly Lys Glu
35 40 45

Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val Ser Val Ala Ser
50 55 60

Arg Asn Asn Val Arg Val Ser Leu Glu Ile Met Glu Glu Lys
65 70 75

<210> 389

<211> 478

<212> PRT

<213> Chlamydia pneumoniae

<400> 389

Met Arg Asp Val Ser Glu Leu Phe Arg Thr His Phe Met His Tyr Ala
5 10 15

Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Ile Leu Asp Gly Leu
20 25 30

Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Leu Met Asp Asp
35 40 45

Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala Leu
50 55 60

His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu Ala
65 70 75 80

Asn Lys Gly Tyr Leu Ile Asp Thr Gln Gly Asn Phe Gly Asn Pro Leu
85 90 95

Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu Ser
100 105 110

Pro Leu Ala Arg Glu Thr Leu Phe Asn Thr Asp Leu Ile Ala Phe His
115 120 125

Asp Ser Tyr Asp Gly Arg Glu Lys Glu Pro Asp Ile Leu Pro Ala Lys
 130 135 140
 Leu Pro Val Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly Met
 145 150 155 160
 Thr Thr Lys Ile Phe Pro His Asn Phe Ala Glu Leu Leu Lys Ala Gln
 165 170 175
 Ile Ala Ile Leu Asn Asp Lys Lys Phe Thr Val Phe Pro Asp Phe Pro
 180 185 190
 Ser Gly Gly Leu Met Asp Pro Ser Glu Tyr Gln Asp Gly Leu Gly Ser
 195 200 205
 Ile Thr Leu Arg Ala Ser Ile Asp Ile Ile Asn Asp Lys Thr Leu Val
 210 215 220
 Val Lys Gln Ile Cys Pro Gln Ser Thr Thr Glu Thr Leu Ile Arg Ser
 225 230 235 240
 Ile Glu Asn Ala Ala Lys Arg Gly Thr Ile Lys Ile Asp Thr Ile Gln
 245 250 255
 Asp Phe Ser Thr Asp Val Pro His Ile Glu Ile Lys Leu Pro Lys Gly
 260 265 270
 Ser Arg Ala Lys Glu Met Leu Pro Leu Leu Phe Glu His Thr Glu Cys
 275 280 285
 Gln Val Ile Leu Tyr Ser Lys Pro Thr Val Ile Tyr Glu Asn Lys Pro
 290 295 300
 Val Glu Cys Ser Ile Ser Glu Ile Leu Lys Leu His Thr Thr Ala Leu
 305 310 315 320
 Gln Gly Tyr Leu Glu Lys Glu Leu Leu Leu Leu Gln Glu Gln Leu Thr
 325 330 335
 Leu Asp His Tyr His Lys Thr Leu Glu Tyr Ile Phe Ile Lys His Lys
 340 345 350
 Leu Tyr Asp Ser Val Arg Glu Val Leu Ala Ile Asn Lys Lys Ile Ser
 355 360 365
 Ala Asp Asp Leu His Gln Ala Val Leu His Ala Leu Glu Pro Trp Leu
 370 375 380
 His Glu Leu Ala Thr Pro Val Thr Lys Gln Asp Thr Ser Gln Leu Ala
 385 390 395 400
 Ser Leu Thr Ile Lys Lys Ile Leu Cys Phe Asn Glu Glu Ala Cys Thr
 405 410 415
 Lys Glu Leu Leu Ala Ile Glu Lys Lys Gln Ala Ala Ile Gln Lys Asp
 420 425 430

090413E 042301

Leu Gly Arg Ile Lys Glu Val Thr Val Lys Tyr Leu Lys Gly Leu Leu
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Glu Arg His Gly His Leu Gly Glu Arg Lys Thr Gln Ile Thr Asn Phe
450 455 460

Lys Thr Ala Lys Thr Ser Ile Leu Lys Gln Gln Thr Leu Ile
465 470 475

<210> 390

<211> 257

<212> PRT

<213> Chlamydia pneumoniae

<400> 390

Met Ala Phe Tyr Ser Pro Ser Thr Ile Ser Lys Tyr Phe Ile Tyr Ser
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Gly Ala Gly Asn Arg Phe Leu Leu Gly Glu Thr Leu Pro Glu Val Glu
20 25 30

Asp Val Arg Phe Leu Cys Gln Glu Thr Arg Val Asp Gly Phe Leu Tyr
35 40 45

Leu Lys Pro Ser Ser Cys Ala Asp Ala Gln Leu Ile Ile Phe Asn Ser
50 55 60

Asp Gly Ser Arg Pro Thr Met Cys Gly Asn Gly Leu Arg Cys Ala Ile
65 70 75 80

Ala His Leu Ala Ser Gln Lys Gly Lys Ser Asp Ile Ser Val Ser Thr
85 90 95

Asp Ser Gly Leu Tyr Ser Gly Tyr Phe Tyr Ser Trp Asp Arg Val Leu
100 105 110

Val Asp Met Thr Leu Ala Asp Trp Arg Ala Ser Val His Arg Leu Glu
115 120 125

Ser Arg Pro Asp Pro Leu Pro Lys Glu Val Val Cys Ile His Thr Gly
130 135 140

Val Pro His Ala Val Val Ile Leu Pro Glu Ile Ser Thr Leu Asp Leu
145 150 155 160

Ser Ile Leu Gly Pro Phe Leu Arg Tyr His Gln Thr Phe Ser Pro Asp
165 170 175

Gly Val Asn Val Asn Phe Val Gln Ile Leu Gly His Cys Gln Leu Arg
180 185 190

Val Arg Thr Tyr Glu Arg Gly Val Glu Gly Glu Thr Ala Ala Cys Gly
195 200 205

Thr Gly Ala Leu Ala Ser Ala Leu Val Val Ser Asn Ser Tyr Gly Trp
210 215 220

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Lys Glu Ser Ile Gln Ile His Thr Trp Gly Gly Glu Leu Met Thr Val
225 230 235 240

Ser Gln Asn Arg Gly Arg Val Tyr Leu Gln Gly Ser Val Thr Arg Asp
245 250 255

Leu

<210> 391

<211> 191

<212> PRT

<213> Chlamydia pneumoniae

<400> 391

Met Ala Asp Gly Glu Val His Lys Leu Arg Asp Ile Ile Glu Lys Glu
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Leu Leu Glu Ala Arg Arg Val Phe Phe Ser Glu Pro Val Thr Glu Lys
20 25 30

Ser Ala Ser Asp Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Lys Asp
35 40 45

Pro Gly Lys Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser Val
50 55 60

Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Leu Thr Ser Pro
65 70 75 80

Val Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val Leu
85 90 95

Ser Leu Cys Ala Ala Pro Gly Arg Arg Phe Ala Thr Pro His Ser Arg
100 105 110

Ile Met Ile His Gln Pro Ser Ile Gly Gly Pro Ile Thr Gly Gln Ala
115 120 125

Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala Arg
130 135 140

Ile Ile Asp Val Tyr Val Glu Ala Thr Asn Gln Pro Arg Asp Ile Ile
145 150 155 160

Glu Lys Ala Ile Asp Arg Asp Met Trp Met Thr Ala Asn Glu Ala Lys
165 170 175

Asp Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser Phe Asn Asp Leu
180 185 190

<210> 392

<211> 232

<212> PRT

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<213> Chlamydia pneumoniae

<400> 392

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Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Leu Lys Asn Tyr Asp
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Phe Ser Lys Ser Tyr Ser Leu Arg Glu Ala Ile Asp Ile Leu Lys Gln
      20              25              30

Cys Pro Pro Val Arg Phe Asp Gln Thr Val Asp Val Ser Ile Lys Leu
      35              40              45

Gly Ile Asp Pro Lys Lys Ser Asp Gln Gln Ile Arg Gly Ala Val Phe
      50              55              60

Leu Pro Asn Gly Thr Gly Lys Thr Leu Arg Ile Leu Val Phe Ala Ser
      65              70              75              80

Gly Asn Lys Val Lys Glu Ala Val Glu Ala Gly Ala Asp Phe Met Gly
      85              90              95

Ser Asp Asp Leu Val Glu Lys Ile Lys Ser Gly Trp Leu Glu Phe Asp
      100             105             110

Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
      115             120             125

Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Thr Gly Thr
      130             135             140

Val Thr Thr Asp Val Ala Lys Ala Ile Ser Glu Leu Arg Lys Gly Lys
      145             150             155             160

Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Gly
      165             170             175

Lys Leu Ser Phe Glu Ser Ser Gln Ile Lys Glu Asn Ile Glu Ala Leu
      180             185             190

Ser Ser Ala Leu Ile Lys Ala Lys Pro Pro Ala Ala Lys Gly Gln Tyr
      195             200             205

Leu Val Ser Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Ile Ser Ile
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Asp Thr Arg Glu Leu Met Ala Ser
      225             230

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<210> 393

<211> 122

<212> PRT

<213> Chlamydia pneumoniae

<400> 393

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Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
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Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu
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Ile Ile Lys Lys Leu Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu
35 40 45

Thr Glu Glu Glu Val Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr
50 55 60

Thr Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
65 70 75 80

Leu Ile Ala Ile His Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
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Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
100 105 110

Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
115 120

<210> 394

<211> 1723

<212> PRT

<213> Chlamydia pneumoniae

<400> 394

Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ala
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Leu Thr Ala Phe Gly Asp Pro Ala Ser Val Glu Ile Ser Thr Ser His
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Thr Gly Ser Gly Asp Pro Thr Ser Asp Ala Ala Leu Thr Gly Phe Thr
35 40 45

Gln Ser Ser Thr Glu Thr Asp Gly Thr Thr Tyr Thr Ile Val Gly Asp
50 55 60

Ile Thr Phe Ser Thr Phe Thr Asn Ile Pro Val Pro Val Val Thr Pro
65 70 75 80

Asp Ala Asn Asp Ser Ser Ser Asn Ser Ser Lys Gly Gly Ser Ser Ser
85 90 95

Ser Gly Ala Thr Ser Leu Ile Arg Ser Ser Asn Leu His Ser Asp Phe
100 105 110

Asp Phe Thr Lys Asp Ser Val Leu Asp Leu Tyr His Leu Phe Phe Pro
115 120 125

Ser Ala Ser Asn Thr Leu Asn Pro Ala Leu Leu Ser Ser Ser Ser
130 135 140

Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Gly Ser Ala Ser

145				150					155					160		
Ala	Val	Val	Ala	Ala 165	Asp	Pro	Lys	Gly	Gly 170	Ala	Ala	Phe	Tyr	Ser 175	Asn	
Glu	Ala	Asn	Gly 180	Thr	Leu	Thr	Phe	Thr 185	Thr	Asp	Ser	Gly	Asn 190	Pro	Gly	
Ser	Leu	Thr 195	Leu	Gln	Asn	Leu	Lys 200	Met	Thr	Gly	Asp	Gly 205	Ala	Ala	Ile	
Tyr	Ser 210	Lys	Gly	Pro	Leu	Val 215	Phe	Thr	Gly	Leu	Lys 220	Asn	Leu	Thr	Phe	
Thr 225	Gly	Asn	Glu	Ser	Gln 230	Lys	Ser	Gly	Gly	Ala 235	Ala	Tyr	Thr	Glu	Gly 240	
Ala	Leu	Thr	Thr	Gln 245	Ala	Ile	Val	Glu	Ala 250	Val	Thr	Phe	Thr	Gly 255	Asn	
Thr	Ser	Ala	Gly 260	Gln	Gly	Gly	Ala	Ile 265	Tyr	Val	Lys	Glu	Ala 270	Thr	Leu	
Phe	Asn 275	Ala	Leu	Asp	Ser	Leu	Lys 280	Phe	Glu	Lys	Asn	Thr 285	Ser	Gly	Gln	
Ala	Gly 290	Gly	Gly	Ile	Tyr	Thr 295	Glu	Ser	Thr	Leu	Thr 300	Ile	Ser	Asn	Ile	
Thr 305	Lys	Ser	Ile	Glu	Phe 310	Ile	Ser	Asn	Lys	Ala 315	Ser	Val	Pro	Ala	Pro 320	
Ala	Pro	Glu	Pro	Thr 325	Ser	Pro	Ala	Pro	Ser 330	Ser	Leu	Ile	Asn	Ser 335	Thr	
Thr	Ile	Asp	Thr 340	Ser	Thr	Leu	Gln	Thr 345	Arg	Ala	Ala	Ser	Ala 350	Thr	Pro	
Ala	Val 355	Ala	Pro	Val	Ala	Ala	Val 360	Thr	Pro	Thr	Pro	Ile 365	Ser	Thr	Gln	
Glu	Thr 370	Ala	Gly	Asn	Gly	Gly 375	Ala	Ile	Tyr	Ala	Lys 380	Gln	Gly	Ile	Ser	
Ile 385	Ser	Thr	Phe	Lys	Asp 390	Leu	Thr	Phe	Lys	Ser 395	Asn	Ser	Ala	Ser	Val 400	
Asp	Ala	Thr	Leu	Thr 405	Val	Asp	Ser	Ser	Thr 410	Ile	Gly	Glu	Ser	Gly 415	Gly	
Ala	Ile	Phe	Ala 420	Ala	Asp	Ser	Ile	Gln	Ile	Gln	Gln	Cys	Thr 430	Gly	Thr	
Thr	Leu	Phe 435	Ser	Gly	Asn	Thr	Ala 440	Asn	Lys	Ser	Gly	Gly 445	Gly	Ile	Tyr	
Ala	Val	Gly	Gln	Val	Thr	Leu	Glu	Asp	Ile	Ala	Asn	Leu	Lys	Met	Thr	

450		455		460
Asn 465	Asn Thr Cys Lys Gly 470	Glu Gly Gly Ala Ile 475	Tyr Thr Lys Lys Ala 480	
Leu Thr Ile Asn 485	Asn Gly Ala Ile Leu Thr 490	Thr Phe Ser Gly Asn 495	Thr	
Ser Thr Asp 500	Asn Gly Gly Ala Ile 505	Phe Ala Val Gly Gly 510	Ile Thr Leu	
Ser Asp 515	Leu Val Glu Val Arg Phe 520	Ser Lys Asn Lys Thr 525	Gly Asn Tyr	
Ser Ala 530	Pro Ile Thr Lys Ala 535	Ser Asn Thr Ala 540	Pro Val Val Ser	
Ser 545	Ser Thr Thr Ala Ala 550	Ser Pro Ala Val Pro 555	Ala Ala Ala Ala 560	
Pro Val Thr Asn 565	Ala Ala Lys Gly Gly 570	Ala Leu Tyr Ser Thr 575	Glu Gly	
Leu Thr Val 580	Ser Gly Ile Thr Ser 585	Ile Leu Ser Phe Glu 590	Asn Asn Glu	
Cys Gln 595	Asn Gln Gly Gly Gly 600	Tyr Val Thr Lys Thr 605	Phe Gln Cys	
Ser Asp 610	Ser His Arg Leu Gln 615	Phe Thr Ser Asn Lys 620	Ala Ala Asp Glu	
Gly 625	Gly Gly Leu Tyr Cys 630	Gly Asp Asp Val Thr 635	Leu Thr Asn Leu 640	
Gly Lys Thr 645	Leu Phe Gln Glu Asn Ser 650	Ser Glu Lys His Gly 655	Gly Gly Gly	
Leu Ser 660	Leu Ala Ser Gly Lys Ser 665	Thr Met Thr Ser 670	Leu Glu Ser	
Phe Cys 675	Leu Asn Ala Asn Thr 680	Lys Glu Asn Gly 685	Gly Gly Ala Asn	
Val Pro 690	Glu Asn Ile Val Leu 695	Thr Phe Thr Tyr Thr 700	Pro Thr Pro Asn	
Glu 705	Pro Ala Pro Val Gln 710	Gln Pro Val Tyr Gly 715	Glu Ala Leu Val 720	
Gly Asn Thr 725	Ala Thr Lys Ser Gly 730	Gly Ile Tyr Thr Lys 735	Asn Ala	
Ala Phe Ser 740	Asn Leu Ser Ser Val 745	Thr Phe Asp Gln Asn 750	Thr Ser Ser	
Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp				

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755	760	765
Cys Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala		
770	775	780
Thr Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg		
785	790	795 800
Ile Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly Gly		
805	810	815
Val Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys Val Ile Thr Gly Ser		
820	825	830
Val Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly Gly Ile Tyr Ala Lys		
835	840	845
Asp Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe Thr Ile Thr Asp Asn		
850	855	860
Lys Val Glu Thr Ser Leu Thr Thr Ser Thr Asn Leu Tyr Gly Gly Gly		
865	870	875 880
Ile Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn Ile Ser Gly Thr Phe		
885	890	895
Gly Ile Thr Gly Asn Ser Val Ile Asn Thr Ala Thr Ser Gln Asp Ala		
900	905	910
Asp Ile Gln Gly Gly Gly Ile Tyr Ala Thr Thr Ser Leu Ser Ile Asn		
915	920	925
Gln Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn Ser Ala Ala Thr Lys		
930	935	940
Lys Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly Ala Ile Phe Ser Ala		
945	950	955 960
Ala Val Thr Ile Glu Asn Asn Ser Gln Pro Ile Ile Phe Leu Asn Asn		
965	970	975
Ser Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr Ala Gly Asn Lys Asp		
980	985	990
Ser Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn		
995	1000	1005
Pro Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu Thr Gly Gly Ala Ile		
1010	1015	1020
Gly Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro Arg Lys Val Ser Ile		
1025	1030	1035 1040
Ala Asp Asn Gly Ser Val Leu Phe Gln Asp Asn Ser Ala Leu Asn Arg		
1045	1050	1055
Gly Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile Ser Arg Thr Gly Ala		

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1060					1065					1070					
Thr	Phe	Ile	Gly	Asn	Ser	Ser	Lys	His	Asp	Gly	Ser	Ala	Ile	Cys	Cys
		1075					1080					1085			
Ser	Thr	Ala	Leu	Thr	Leu	Ala	Pro	Asn	Ser	Gln	Leu	Ile	Phe	Glu	Asn
		1090					1095					1100			
Asn	Lys	Val	Thr	Glu	Thr	Thr	Ala	Thr	Thr	Lys	Ala	Ser	Ile	Asn	Asn
		1105					1110					1115			1120
Leu	Gly	Ala	Ala	Ile	Tyr	Gly	Asn	Asn	Glu	Thr	Ser	Asp	Val	Thr	Ile
				1125					1130					1135	
Ser	Leu	Ser	Ala	Glu	Asn	Gly	Ser	Ile	Phe	Phe	Lys	Asn	Asn	Leu	Cys
			1140					1145					1150		
Thr	Ala	Thr	Asn	Lys	Tyr	Cys	Ser	Ile	Ala	Gly	Asn	Val	Lys	Phe	Thr
			1155					1160					1165		
Ala	Ile	Glu	Ala	Ser	Ala	Gly	Lys	Ala	Ile	Ser	Phe	Tyr	Asp	Ala	Val
		1170					1175						1180		
Asn	Val	Ser	Thr	Lys	Glu	Thr	Asn	Ala	Gln	Glu	Leu	Lys	Leu	Asn	Glu
				1185			1190					1195			1200
Lys	Ala	Thr	Ser	Thr	Gly	Thr	Ile	Leu	Phe	Ser	Gly	Glu	Leu	His	Glu
				1205					1210					1215	
Asn	Lys	Ser	Tyr	Ile	Pro	Gln	Lys	Val	Thr	Phe	Ala	His	Gly	Asn	Leu
			1220					1225					1230		
Ile	Leu	Gly	Lys	Asn	Ala	Glu	Leu	Ser	Val	Val	Ser	Phe	Thr	Gln	Ser
		1235					1240						1245		
Pro	Gly	Thr	Thr	Ile	Thr	Met	Gly	Pro	Gly	Ser	Val	Leu	Ser	Asn	His
		1250					1255					1260			
Ser	Lys	Glu	Ala	Gly	Gly	Ile	Ala	Ile	Asn	Asn	Val	Ile	Ile	Asp	Phe
		1265					1270					1275			1280
Ser	Glu	Ile	Val	Pro	Thr	Lys	Asp	Asn	Ala	Thr	Val	Ala	Pro	Pro	Thr
			1285						1290				1295		
Leu	Lys	Leu	Val	Ser	Arg	Thr	Asn	Ala	Asp	Ser	Lys	Asp	Lys	Ile	Asp
		1300						1305					1310		
Ile	Thr	Gly	Thr	Val	Thr	Leu	Leu	Asp	Pro	Asn	Gly	Asn	Leu	Tyr	Gln
		1315					1320					1325			
Asn	Ser	Tyr	Leu	Gly	Glu	Asp	Arg	Asp	Ile	Thr	Leu	Phe	Asn	Ile	Asp
		1330					1335					1340			
Asn	Ser	Ala	Ser	Gly	Ala	Val	Thr	Ala	Thr	Asn	Val	Thr	Leu	Gln	Gly
		1345					1350					1355			1360
Asn	Leu	Gly	Ala	Lys	Lys	Gly	Tyr	Leu	Gly	Thr	Trp	Asn	Leu	Asp	Pro

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Asn	Ser	Ser	Gly	Ser	Lys	Ile	Ile	Leu	Lys	Trp	Thr	Phe	Asp	Lys	Tyr				
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Leu	Arg	Trp	Pro	Tyr	Ile	Pro	Arg	Asp	Asn	His	Phe	Tyr	Ile	Asn	Ser				
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Ile	Trp	Gly	Ala	Gln	Asn	Ser	Leu	Val	Thr	Val	Lys	Gln	Gly	Ile	Leu				
	1410					1415					1420								
Gly	Asn	Met	Leu	Asn	Asn	Ala	Arg	Phe	Glu	Asp	Pro	Ala	Phe	Asn	Asn				
1425					1430					1435					1440				
Phe	Trp	Ala	Ser	Ala	Ile	Gly	Ser	Phe	Leu	Arg	Lys	Glu	Val	Ser	Arg				
				1445					1450					1455					
Asn	Ser	Asp	Ser	Phe	Thr	Tyr	His	Gly	Arg	Gly	Tyr	Thr	Ala	Ala	Val				
			1460					1465					1470						
Asp	Ala	Lys	Pro	Arg	Gln	Glu	Phe	Ile	Leu	Gly	Ala	Ala	Phe	Ser	Gln				
		1475					1480					1485							
Val	Phe	Gly	His	Ala	Glu	Ser	Glu	Tyr	His	Leu	Asp	Asn	Tyr	Lys	His				
	1490					1495					1500								
Lys	Gly	Ser	Gly	His	Ser	Thr	Gln	Ala	Ser	Leu	Tyr	Ala	Gly	Asn	Ile				
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Phe	Tyr	Phe	Pro	Ala	Ile	Arg	Ser	Arg	Pro	Ile	Leu	Phe	Gln	Gly	Val				
				1525					1530					1535					
Ala	Thr	Tyr	Gly	Tyr	Met	Gln	His	Asp	Thr	Thr	Thr	Tyr	Tyr	Pro	Ser				
			1540					1545					1550						
Ile	Glu	Glu	Lys	Asn	Met	Ala	Asn	Trp	Asp	Ser	Ile	Ala	Trp	Leu	Phe				
	1555						1560					1565							
Asp	Leu	Arg	Phe	Ser	Val	Asp	Leu	Lys	Glu	Pro	Gln	Pro	His	Ser	Thr				
	1570					1575					1580								
Ala	Arg	Leu	Thr	Phe	Tyr	Thr	Glu	Ala	Glu	Tyr	Thr	Arg	Ile	Arg	Gln				
1585					1590					1595					1600				
Glu	Lys	Phe	Thr	Glu	Leu	Asp	Tyr	Asp	Pro	Arg	Ser	Phe	Ser	Ala	Cys				
				1605					1610					1615					
Ser	Tyr	Gly	Asn	Leu	Ala	Ile	Pro	Thr	Gly	Phe	Ser	Val	Asp	Gly	Ala				
			1620					1625					1630						
Leu	Ala	Trp	Arg	Glu	Ile	Ile	Leu	Tyr	Asn	Lys	Val	Ser	Ala	Ala	Tyr				
	1635						1640					1645							
Leu	Pro	Val	Ile	Leu	Arg	Asn	Asn	Pro	Lys	Ala	Thr	Tyr	Glu	Val	Leu				

305					310					315				320	
Ala	Pro	Glu	Pro	Thr	Ser	Pro	Ala	Pro	Ser	Ser	Leu	Ile	Asn	Ser	Thr
				325					330					335	
Thr	Ile	Asp	Thr	Ser	Thr	Leu	Gln	Thr	Arg	Ala	Ala	Ser	Ala	Thr	Pro
			340					345					350		
Ala	Val	Ala	Pro	Val	Ala	Ala	Val	Thr	Pro	Thr	Pro	Ile	Ser	Thr	Gln
		355					360					365			
Glu	Thr	Ala	Gly	Asn	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Gln	Gly	Ile	Ser
	370				375						380				
Ile	Ser	Thr	Phe	Lys	Asp	Leu	Thr	Phe	Lys	Ser	Asn	Ser	Ala	Ser	Val
385				390					395						400
Asp	Ala	Thr	Leu	Thr	Val	Asp	Ser	Ser	Thr	Ile	Gly	Glu	Ser	Gly	Gly
			405					410						415	
Ala	Ile	Phe	Ala	Ala	Asp	Ser	Ile	Gln	Ile	Gln	Gln	Cys	Thr	Gly	Thr
		420						425					430		
Thr	Leu	Phe	Ser	Gly	Asn	Thr	Ala	Asn	Lys	Ser	Gly	Gly	Gly	Ile	Tyr
	435						440					445			
Ala	Val	Gly	Gln	Val	Thr	Leu	Glu	Asp	Ile	Ala	Asn	Leu	Lys	Met	Thr
	450					455					460				
Asn	Asn	Thr	Cys	Lys	Gly	Glu	Gly	Gly	Ala	Ile	Tyr	Thr	Lys	Lys	Ala
465				470					475						480
Leu	Thr	Ile	Asn	Asn	Gly	Ala	Ile	Leu	Thr	Thr	Phe	Ser	Gly	Asn	Thr
			485					490						495	
Ser	Thr	Asp	Asn	Gly	Gly	Ala	Ile	Phe	Ala	Val	Gly	Gly	Ile	Thr	Leu
		500						505					510		
Ser	Asp	Leu	Val	Glu	Val	Arg	Phe	Ser	Lys	Asn	Lys	Thr	Gly	Asn	Tyr
	515					520						525			
Ser	Ala	Pro	Ile	Thr	Lys	Ala	Ala	Ser	Asn	Thr	Ala	Pro	Val	Val	Ser
	530					535					540				
Ser	Ser	Thr	Thr	Ala	Ala	Ser	Pro	Ala	Val	Pro	Ala	Ala	Ala	Ala	Ala
545				550						555					560
Pro	Val	Thr	Asn	Ala	Ala	Lys	Gly	Gly	Ala	Leu	Tyr	Ser	Thr	Glu	Gly
			565					570						575	
Leu	Thr	Val	Ser	Gly	Ile	Thr	Ser	Ile	Leu	Ser	Phe	Glu	Asn	Asn	Glu
		580						585					590		
Cys	Gln	Asn	Gln	Gly	Gly	Gly	Ala	Tyr	Val	Thr	Lys	Thr	Phe	Gln	Cys
	595					600						605			
Ser	Asp	Ser	His	Arg	Leu	Gln	Phe	Thr	Ser	Asn	Lys	Ala	Ala	Asp	Glu
	610				615						620				
Gly	Gly	Gly	Leu	Tyr	Cys	Gly	Asp	Asp	Val	Thr	Leu	Thr	Asn	Leu	Thr
625				630						635					640
Gly	Lys	Thr	Leu	Phe	Gln	Glu	Asn	Ser	Ser	Glu	Lys	His	Gly	Gly	Gly
			645					650					655		
Leu	Ser	Leu	Ala	Ser	Gly	Lys	Ser	Leu	Thr	Met	Thr	Ser	Leu	Glu	Ser
		660						665					670		
Phe	Cys	Leu	Asn	Ala	Asn	Thr	Ala	Lys	Glu	Asn	Gly	Gly	Gly	Ala	Asn
	675					680						685			
Val	Pro	Glu	Asn	Ile	Val	Leu	Thr	Phe	Thr	Tyr	Thr	Pro	Thr	Pro	Asn
	690				695						700				
Glu	Pro	Ala	Pro	Val	Gln	Gln	Pro	Val	Tyr	Gly	Glu	Ala	Leu	Val	Thr
705				710						715					720
Gly	Asn	Thr	Ala	Thr	Lys	Ser	Gly	Gly	Gly	Ile	Tyr	Thr	Lys	Asn	Ala
			725					730					735		
Ala	Phe	Ser	Asn	Leu	Ser	Ser	Val	Thr	Phe	Asp	Gln	Asn	Thr	Ser	Ser
		740						745					750		
Glu	Asn	Gly	Gly	Ala	Leu	Leu	Thr	Gln	Lys	Ala	Ala	Asp	Lys	Thr	Asp
	755						760					765			

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 102210 2271850

Cys Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala
 770 775 780
 Thr Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg
 785 790 795 800
 Ile Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly Gly
 805 810 815
 Val Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys Val Ile Thr Gly Ser
 820 825 830
 Val Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly Gly Ile Tyr Ala Lys
 835 840 845
 Asp Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe Thr Ile Thr Asp Asn
 850 855 860
 Lys Val Glu Thr Ser Leu Thr Thr Ser Thr Asn Leu Tyr Gly Gly Gly
 865 870 875 880
 Ile Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn Ile Ser Gly Thr Phe
 885 890 895
 Gly Ile Thr Gly Asn Ser Val Ile Asn Thr Ala Thr Ser Gln Asp Ala
 900 905 910
 Asp Ile Gln Gly Gly Gly Ile Tyr Ala Thr Thr Ser Leu Ser Ile Asn
 915 920 925
 Gln Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn Ser Ala Ala Thr Lys
 930 935 940
 Lys Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly Ala Ile Phe Ser Ala
 945 950 955 960
 Ala Val Thr Ile Glu Asn Asn Ser Gln Pro Ile Ile Phe Leu Asn Asn
 965 970 975
 Ser Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr Ala Gly Asn Lys Asp
 980 985 990
 Ser Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn
 995 1000 1005
 Pro Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu Thr Gly Gly Ala Ile
 1010 1015 1020
 Gly Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro Arg Lys Val Ser Ile
 1025 1030 1035 1040
 Ala Asp Asn Gly Ser Val Leu Phe Gln Asp Asn Ser Ala Leu Asn Arg
 1045 1050 1055
 Gly Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile Ser Arg Thr Gly Ala
 1060 1065 1070
 Thr Phe Ile Gly Asn Ser Ser Lys His Asp Gly Ser Ala Ile Cys Cys
 1075 1080 1085
 Ser Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln Leu Ile Phe Glu Asn
 1090 1095 1100
 Asn Lys Val Thr Glu Thr Thr Ala Thr Thr Lys Ala Ser Ile Asn Asn
 1105 1110 1115 1120
 Leu Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr Ser Asp Ile Thr Ile
 1125 1130 1135
 Ser Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe Lys Asn Asn Leu Cys
 1140 1145 1150
 Thr Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly Asn Val Lys Phe Thr
 1155 1160 1165
 Ala Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser Phe Tyr Asp Ala Val
 1170 1175 1180
 Asn Val Ser Thr Lys Glu Thr Asn Ala Gln Glu Leu Lys Leu Asn Glu
 1185 1190 1195 1200
 Lys Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser Gly Glu Leu His Glu
 1205 1210 1215
 Asn Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe Ala His Gly Asn Leu

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				1220					1225				1230			
Ile	Leu	Gly	Lys	Asn	Ala	Glu	Leu	Ser	Val	Val	Ser	Phe	Thr	Gln	Ser	
		1235					1240					1245				
Pro	Gly	Thr	Thr	Ile	Thr	Met	Gly	Pro	Gly	Ser	Val	Leu	Ser	Asn	His	
	1250					1255					1260					
Ser	Lys	Glu	Ala	Gly	Gly	Ile	Ala	Ile	Asn	Asn	Val	Ile	Ile	Asp	Phe	
1265				1270						1275					1280	
Ser	Glu	Ile	Val	Pro	Thr	Lys	Asp	Asn	Ala	Thr	Val	Ala	Pro	Pro	Thr	
				1285					1290						1295	
Leu	Lys	Leu	Val	Ser	Arg	Thr	Asn	Ala	Asp	Ser	Lys	Asp	Lys	Ile	Asp	
				1300				1305						1310		
Ile	Thr	Gly	Thr	Val	Thr	Leu	Leu	Asp	Pro	Asn	Gly	Asn	Leu	Tyr	Gln	
	1315						1320					1325				
Asn	Ser	Tyr	Leu	Gly	Glu	Asp	Arg	Asp	Ile	Thr	Leu	Phe	Asn	Ile	Asp	
	1330					1335					1340					
Asn	Ser	Ala	Ser	Gly	Ala	Val	Thr	Ala	Thr	Asn	Val	Thr	Leu	Gln	Gly	
1345					1350						1355				1360	
Asn	Leu	Gly	Ala	Lys	Lys	Gly	Tyr	Leu	Gly	Thr	Trp	Asn	Leu	Asp	Pro	
				1365					1370						1375	
Asn	Ser	Ser	Gly	Ser	Lys	Ile	Ile	Leu	Lys	Trp	Thr	Phe	Asp	Lys	Tyr	
			1380					1385						1390		
Leu	Arg	Trp	Pro	Tyr	Ile	Pro	Arg	Asp	Asn	His	Phe	Tyr	Ile	Asn	Ser	
	1395						1400					1405				
Ile	Trp	Gly	Ala	Gln	Asn	Ser	Leu	Val	Thr	Val	Lys	Gln	Gly	Ile	Leu	
	1410					1415					1420					
Gly	Asn	Met	Leu	Asn	Asn	Ala	Arg	Phe	Glu	Asp	Pro	Ala	Phe	Asn	Asn	
1425					1430					1435					1440	
Phe	Trp	Ala	Ser	Ala	Ile	Gly	Ser	Phe	Leu	Arg	Lys	Glu	Val	Ser	Arg	
				1445					1450						1455	
Asn	Ser	Asp	Ser	Phe	Thr	Tyr	His	Gly	Arg	Gly	Tyr	Thr	Ala	Ala	Val	
			1460					1465						1470		
Asp	Ala	Lys	Pro	Arg	Gln	Glu	Phe	Ile	Leu	Gly	Ala	Ala	Phe	Ser	Gln	
		1475					1480					1485				
Val	Phe	Gly	His	Ala	Glu	Ser	Glu	Tyr	His	Leu	Asp	Asn	Tyr	Lys	His	
	1490					1495					1500					
Lys	Gly	Ser	Gly	His	Ser	Thr	Gln	Ala	Ser	Leu	Tyr	Ala	Gly	Asn	Ile	
1505					1510						1515				1520	
Phe	Tyr	Phe	Pro	Ala	Ile	Arg	Ser	Arg	Pro	Ile	Leu	Phe	Gln	Gly	Val	
				1525					1530						1535	
Ala	Thr	Tyr	Gly	Tyr	Met	Gln	His	Asp	Thr	Thr	Thr	Tyr	Tyr	Pro	Ser	
			1540					1545						1550		
Ile	Glu	Glu	Lys	Asn	Met	Ala	Asn	Trp	Asp	Ser						

225 230 235 240
 Ile Ile Asp Glu Ala Ser Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys
 245 250 255
 Leu Ser Thr Ala Met Leu Lys Arg Met Leu Asp Ala Gly Ile Ala Ser
 260 265 270
 Val Lys Ile Ala Val Asp Ala Asp Glu Asn His Pro Ile Ile Lys Met
 275 280 285
 Leu Ala Lys Asp Pro Thr Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe
 290 295 300
 Tyr Arg Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg
 305 310 315 320
 Ser Thr Ile Met Arg Leu Phe Phe Asp Pro Lys Arg Tyr Asn Leu Gly
 325 330 335
 Arg Val Gly Arg Tyr Lys Leu Asn Arg Lys Leu Gly Phe Ser Ile Asp
 340 345 350
 Asp Glu Ala Leu Ser Gln Val Thr Leu Arg Lys Glu Asp Val Ile Gly
 355 360 365
 Ala Leu Lys Tyr Leu Ile Arg Leu Lys Met Gly Asp Glu Lys Ala Cys
 370 375 380
 Val Asp Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly
 385 390 395 400
 Glu Leu Ile Gln Asn Gln Cys Arg Ser Gly Leu Ala Arg Met Glu Lys
 405 410 415
 Ile Val Arg Glu Arg Met Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu
 420 425 430
 Thr Pro Gly Lys Val Val Ser Ala Lys Gly Leu Ala Ser Val Leu Lys
 435 440 445
 Asp Phe Phe Gly Arg Ser Gln Leu Ser Gln Phe Met Asp Gln Thr Asn
 450 455 460
 Pro Val Ala Glu Leu Thr His Lys Arg Arg Leu Ser Ala Leu Gly Pro
 465 470 475 480
 Gly Gly Leu Asn Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val His
 485 490 495
 Ala Ser His Tyr Gly Arg Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro
 500 505 510
 Asn Ile Gly Leu Ile Thr Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu
 515 520 525
 Phe Gly Phe Ile Glu Thr Pro Tyr Arg Ile Val Arg Asp Gly Ile Val

530	535	540
Thr Asp Glu Ile Glu Tyr Met Thr Ala Asp Val Glu Glu Glu Cys Val 545 550 555 560		
Ile Ala Gln Ala Ser Ala Ser Leu Asp Glu Tyr Asn Met Phe Thr Glu 565 570 575		
Pro Val Cys Trp Val Arg Tyr Ala Gly Glu Ala Phe Glu Ala Asp Thr 580 585 590		
Ser Thr Val Thr His Met Asp Val Ser Pro Lys Gln Leu Val Ser Ile 595 600 605		
Val Thr Gly Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala 610 615 620		
Leu Met Gly Ser Asn Met Gln Arg Gln Ala Val Pro Leu Leu Lys Thr 625 630 635 640		
Glu Ala Pro Val Val Gly Thr Gly Leu Glu Cys Arg Ala Ala Lys Asp 645 650 655		
Ser Gly Ala Ile Val Val Ala Glu Glu Asp Gly Val Val Asp Phe Val 660 665 670		
Asp Gly Tyr Lys Val Val Val Ala Ala Lys His Asn Pro Thr Ile Lys 675 680 685		
Arg Thr Tyr His Leu Lys Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys 690 695 700		
Ile Asn Gln Gln Pro Leu Cys Ala Val Gly Asp Val Ile Thr Lys Gly 705 710 715 720		
Asp Val Ile Ala Asp Gly Pro Ala Thr Asp Arg Gly Glu Leu Ala Leu 725 730 735		
Gly Lys Asn Val Leu Val Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe 740 745 750		
Glu Asp Ala Ile Ile Ile Ser Glu Lys Leu Ile Arg Glu Asp Ala Tyr 755 760 765		
Thr Ser Ile Tyr Ile Glu Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys 770 775 780		
Leu Gly Lys Glu Glu Ile Thr Arg Asp Ile Pro Asn Val Ser Asp Glu 785 790 795 800		
Val Leu Ala Asn Leu Gly Glu Asp Gly Ile Ile Arg Ile Gly Ala Glu 805 810 815		
Val Lys Pro Gly Asp Ile Leu Val Gly Lys Ile Thr Pro Lys Ser Glu 820 825 830		
Thr Glu Leu Ala Pro Glu Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu		

835	840	845
Lys Ala Ala Asp Val Lys Asp Ala Ser Leu Thr Val Pro Pro Gly Thr		
850	855	860
Glu Gly Val Val Met Asp Val Lys Val Phe Ser Arg Lys Asp Arg Leu		
865	870	875
Ser Lys Ser Asp Asp Glu Leu Val Glu Glu Ala Val His Leu Lys Asp		
	885	890
Leu Gln Lys Gly Tyr Lys Asn Gln Val Ala Thr Leu Lys Thr Glu Tyr		
	900	905
Arg Glu Lys Leu Gly Ala Leu Leu Leu Asn Glu Lys Ala Pro Ala Ala		
	915	920
Ile Ile His Arg Arg Thr Ala Glu Ile Val Val His Glu Gly Leu Leu		
	930	935
Phe Asp Gln Glu Thr Ile Glu Arg Ile Glu Gln Glu Asp Leu Val Asp		
	945	950
Leu Leu Met Pro Asn Cys Glu Met Tyr Glu Val Leu Lys Gly Leu Leu		
	965	970
Ser Asp Tyr Glu Thr Ala Leu Gln Arg Leu Glu Ile Asn Tyr Lys Thr		
	980	985
Glu Val Glu His Ile Arg Glu Gly Asp Ala Asp Leu Asp His Gly Val		
	995	1000
Ile Arg Gln Val Lys Val Tyr Val Ala Ser Lys Arg Lys Leu Gln Val		
	1010	1015
Gly Asp Lys Met Ala Gly Arg His Gly Asn Lys Gly Val Val Ser Lys		
	1025	1030
Ile Val Pro Glu Ala Asp Met Pro Tyr Leu Ser Asn Gly Glu Thr Val		
	1045	1050
Gln Met Ile Leu Asn Pro Leu Gly Val Pro Ser Arg Met Asn Leu Gly		
	1060	1065
Gln Val Leu Glu Thr His Leu Gly Tyr Ala Ala Lys Thr Ala Gly Ile		
	1075	1080
Tyr Val Lys Thr Pro Val Phe Glu Gly Phe Pro Glu Gln Arg Ile Trp		
	1090	1095
Asp Met Met Ile Glu Gln Gly Leu Pro Glu Asp Gly Lys Ser Phe Leu		
	1105	1110
Tyr Asp Gly Lys Thr Gly Glu Arg Phe Asp Asn Lys Val Val Ile Gly		
	1125	1130
Tyr Ile Tyr Met Leu Lys Leu Ser His Leu Ile Ala Asp Lys Ile His		

FOI b7D b7C b7E b7F b7G b7H b7I b7J b7K b7L b7M b7N b7O b7P b7Q b7R b7S b7T b7U b7V b7W b7X b7Y b7Z

Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val Ser Ala
145 150 155 160

Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile Lys His
165 170 175

Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg Glu Asn
180 185 190

Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr Leu Trp
195 200 205

Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser Cys Lys
210 215 220

<210> 398

<211> 556

<212> PRT

<213> Chlamydia pneumoniae

<400> 398

Met Ser Lys Leu Ile Arg Arg Val Val Thr Val Leu Ala Leu Thr Ser
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Met Ala Ser Cys Phe Ala Ser Gly Gly Ile Glu Ala Ala Val Ala Glu
20 25 30

Ser Leu Ile Thr Lys Ile Val Ala Ser Ala Glu Thr Lys Pro Ala Pro
35 40 45

Val Pro Met Thr Ala Lys Lys Val Arg Leu Val Arg Arg Asn Lys Gln
50 55 60

Pro Val Glu Gln Lys Ser Arg Gly Ala Phe Cys Asp Lys Glu Phe Tyr
65 70 75 80

Pro Cys Glu Glu Gly Arg Cys Gln Pro Val Glu Ala Gln Gln Glu Ser
85 90 95

Cys Tyr Gly Arg Leu Tyr Ser Val Lys Val Asn Asp Asp Cys Asn Val
100 105 110

Glu Ile Cys Gln Ser Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr
115 120 125

Pro Ile Glu Ile Leu Ala Ile Gly Lys Lys Asp Cys Val Asp Val Val
130 135 140

Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Ser Ser Asp Pro
145 150 155 160

Glu Thr Thr Pro Thr Ser Asp Gly Lys Leu Val Trp Lys Ile Asp Arg
165 170 175

Leu Gly Ala Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu
180 185 190

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Lys Glu Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu
 195 200 205
 Leu Arg Ser Tyr Thr Lys Cys Gly Gln Pro Ala Ile Cys Ile Lys Gln
 210 215 220
 Glu Gly Pro Asp Cys Ala Cys Leu Arg Cys Pro Val Cys Tyr Lys Ile
 225 230 235 240
 Glu Val Val Asn Thr Gly Ser Ala Ile Ala Arg Asn Val Thr Val Asp
 245 250 255
 Asn Pro Val Pro Asp Gly Tyr Ser His Ala Ser Gly Gln Arg Val Leu
 260 265 270
 Ser Phe Asn Leu Gly Asp Met Arg Pro Gly Asp Lys Lys Val Phe Thr
 275 280 285
 Val Glu Phe Cys Pro Gln Arg Arg Gly Gln Ile Thr Asn Val Ala Thr
 290 295 300
 Val Thr Tyr Cys Gly Gly His Lys Cys Ser Ala Asn Val Thr Thr Val
 305 310 315 320
 Val Asn Glu Pro Cys Val Gln Val Asn Ile Ser Gly Ala Asp Trp Ser
 325 330 335
 Tyr Val Cys Lys Pro Val Glu Tyr Ser Ile Ser Val Ser Asn Pro Gly
 340 345 350
 Asp Leu Val Leu His Asp Val Val Ile Gln Asp Thr Leu Pro Ser Gly
 355 360 365
 Val Thr Val Leu Glu Ala Pro Gly Gly Glu Ile Cys Cys Asn Lys Val
 370 375 380
 Val Trp Arg Ile Lys Glu Met Cys Pro Gly Glu Thr Leu Gln Phe Lys
 385 390 395 400
 Leu Val Val Lys Ala Gln Val Pro Gly Arg Phe Thr Asn Gln Val Ala
 405 410 415
 Val Thr Ser Glu Ser Asn Cys Gly Thr Cys Thr Ser Cys Ala Glu Thr
 420 425 430
 Thr Thr His Trp Lys Gly Leu Ala Ala Thr His Met Cys Val Leu Asp
 435 440 445
 Thr Asn Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys
 450 455 460
 Val Thr Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu
 465 470 475 480
 Lys Phe Ser Lys Glu Leu Gln Pro Ile Ala Ser Ser Gly Pro Thr Lys
 485 490 495

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Gly Val Glu Ile Thr Val Ile Glu Ala Leu Asp His Ile Leu Ala Val

195					200					205					
Asn	Asn	Lys	Glu	Val	Ser	Gln	Thr	Val	Thr	Asn	Lys	Phe	Thr	Lys	Gln
210						215					220				
Gly	Ile	Arg	Ile	Leu	Thr	Lys	Ala	Ser	Ile	Ser	Ala	Ile	Glu	Glu	Ser
225						230					235				240
Gln	Asn	Gln	Val	Arg	Ile	Thr	Val	Asn	Asp	Gln	Val	Glu	Glu	Phe	Asp
				245					250					255	
Tyr	Val	Leu	Val	Ala	Ile	Gly	Arg	Gln	Phe	Asn	Thr	Ala	Ser	Ile	Gly
			260					265					270		
Leu	Asp	Asn	Ala	Gly	Val	Ile	Arg	Asp	Asp	Arg	Gly	Val	Ile	Pro	Val
		275					280					285			
Asp	Glu	Thr	Met	Arg	Thr	Asn	Val	Pro	Asn	Ile	Tyr	Ala	Ile	Gly	Asp
	290					295					300				
Ile	Thr	Gly	Lys	Trp	Leu	Leu	Ala	His	Val	Ala	Ser	His	Gln	Gly	Val
305					310					315					320
Ile	Ala	Ala	Lys	Asn	Ile	Ser	Gly	His	His	Glu	Val	Met	Asp	Tyr	Ser
				325					330					335	
Ala	Ile	Pro	Ser	Val	Ile	Phe	Thr	His	Pro	Glu	Ile	Ala	Met	Val	Gly
			340					345					350		
Leu	Ser	Leu	Gln	Glu	Ala	Glu	Gln	Gln	Asn	Leu	Pro	Ala	Lys	Leu	Thr
		355					360					365			
Lys	Phe	Pro	Phe	Lys	Ala	Ile	Gly	Lys	Ala	Val	Ala	Leu	Gly	Ala	Ser
	370					375					380				
Asp	Gly	Phe	Ala	Ala	Ile	Val	Ser	His	Glu	Ile	Thr	Gln	Gln	Ile	Leu
385					390					395					400
Gly	Ala	Tyr	Val	Ile	Gly	Pro	His	Ala	Ser	Ser	Leu	Ile	Gly	Glu	Met
			405						410					415	
Thr	Leu	Ala	Ile	Arg	Asn	Glu	Leu	Thr	Leu	Pro	Cys	Ile	Tyr	Glu	Thr
			420					425					430		
Val	His	Ala	His	Pro	Thr	Leu	Ser	Glu	Val	Trp	Ala	Glu	Gly	Ala	Leu
		435					440					445			
Leu	Ala	Thr	Asn	His	Pro	Leu	His	Phe	Pro	Pro	Lys	Ser			
	450					455					460				

<210> 400

<211> 544

<212> PRT

<213> Chlamydia pneumoniae

<400> 400

Met	Ala	Ala	Lys	Asn	Ile	Lys	Tyr	Asn	Glu	Glu	Ala	Arg	Lys	Lys	Ile
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His	Lys	Gly	Val	Lys	Thr	Leu	Ala	Glu	Ala	Val	Lys	Val	Thr	Leu	Gly
			20					25					30		
Pro	Lys	Gly	Arg	His	Val	Val	Ile	Asp	Lys	Ser	Phe	Gly	Ser	Pro	Gln
		35					40					45			
Val	Thr	Lys	Asp	Gly	Val	Thr	Val	Ala	Lys	Glu	Ile	Glu	Leu	Glu	Asp
	50					55					60				
Lys	His	Glu	Asn	Met	Gly	Ala	Gln	Met	Val	Lys	Glu	Val	Ala	Ser	Lys
65					70					75					80
Thr	Ala	Asp	Lys	Ala	Gly	Asp	Gly	Thr	Thr	Thr	Ala	Thr	Val	Leu	Ala
				85					90					95	
Glu	Ala	Ile	Tyr	Ser	Glu	Gly	Leu	Arg	Asn	Val	Thr	Ala	Gly	Ala	Asn
			100					105					110		
Pro	Met	Asp	Leu	Lys	Arg	Gly	Ile	Asp	Lys	Ala	Val	Lys	Val	Val	Val
		115					120					125			
Asp	Glu	Leu	Lys	Lys	Ile	Ser	Lys	Pro	Val	Gln	His	His	Lys	Glu	Ile
	130					135					140				
Ala	Gln	Val	Ala	Thr	Ile	Ser	Ala	Asn	Asn	Asp	Ser	Glu	Ile	Gly	Asn
145					150					155					160
Leu	Ile	Ala	Glu	Ala	Met	Glu	Lys	Val	Gly	Lys	Asn	Gly	Ser	Ile	Thr
				165					170					175	
Val	Glu	Glu	Ala	Lys	Gly	Phe	Glu	Thr	Val	Leu	Asp	Val	Val	Glu	Gly
			180					185					190		
Met	Asn	Phe	Asn	Arg	Gly	Tyr	Leu	Ser	Ser	Tyr	Phe	Ser	Thr	Asn	Pro
		195					200					205			
Glu	Thr	Gln	Glu	Cys	Val	Leu	Glu	Asp	Ala	Leu	Ile	Leu	Ile	Tyr	Asp
	210					215					220				
Lys	Lys	Ile	Ser	Gly	Ile	Lys	Asp	Phe	Leu	Pro	Val	Leu	Gln	Gln	Val
225					230					235					240
Ala	Glu	Ser	Gly	Arg	Pro	Leu	Leu	Ile	Ile	Ala	Glu	Glu	Ile	Glu	Gly
				245					250					255	
Glu	Ala	Leu	Ala	Thr	Leu	Val	Val	Asn	Arg	Leu	Arg	Ala	Gly	Phe	Arg
			260					265					270		
Val	Cys	Ala	Val	Lys	Ala	Pro	Gly	Phe	Gly	Asp	Arg	Arg	Lys	Ala	Met
		275					280					285			
Leu	Glu	Asp	Ile	Ala	Ile	Leu	Thr	Gly	Gly	Gln	Leu	Val	Ser	Glu	Glu
	290					295					300				

Leu Gly Met Lys Leu Glu Asn Thr Thr Leu Ala Met Leu Gly Lys Ala
305 310 315 320

Lys Lys Val Ile Val Thr Lys Glu Asp Thr Thr Ile Val Glu Gly Leu
325 330 335

Gly Asn Lys Pro Asp Ile Gln Ala Arg Cys Asp Asn Ile Lys Lys Gln
340 345 350

Ile Glu Asp Ser Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg
355 360 365

Leu Ala Lys Leu Ser Gly Gly Val Ala Val Ile Arg Val Gly Ala Ala
370 375 380

Thr Glu Ile Glu Met Lys Glu Lys Lys Asp Arg Val Asp Asp Ala Gln
385 390 395 400

His Ala Thr Ile Ala Ala Val Glu Glu Gly Ile Leu Pro Gly Gly Gly
405 410 415

Thr Ala Leu Val Arg Cys Ile Pro Thr Leu Glu Ala Phe Leu Pro Met
420 425 430

Leu Ala Asn Glu Asp Glu Ala Ile Gly Thr Arg Ile Ile Leu Lys Ala
435 440 445

Leu Thr Ala Pro Leu Lys Gln Ile Ala Ser Asn Ala Gly Lys Glu Gly
450 455 460

Ala Ile Ile Cys Gln Gln Val Leu Ala Arg Ser Ala Asn Glu Gly Tyr
465 470 475 480

Asp Ala Leu Arg Asp Ala Tyr Thr Asp Met Ile Asp Ala Gly Ile Leu
485 490 495

Asp Pro Thr Lys Val Thr Arg Ser Ala Leu Glu Ser Ala Ala Ser Ile
500 505 510

Ala Gly Leu Leu Leu Thr Thr Glu Ala Leu Ile Ala Asp Ile Pro Glu
515 520 525

Glu Lys Ser Ser Ser Ala Pro Ala Met Pro Ser Ala Gly Met Asp Tyr
530 535 540

<210> 401

<211> 664

<212> PRT

<213> Chlamydia pneumoniae

<400> 401

Met Glu Lys Val Ser Ser Tyr Pro Ser Val Pro Leu Pro Leu Gly Ala
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Ser Lys Ile Ser Pro Asn Arg Tyr Arg Phe Ala Leu Tyr Ala Ser Gln
20 25 30

Ala Thr Glu Val Ile Leu Ala Leu Thr Asp Glu Asn Ser Glu Val Ile
 35 40 45
 Glu Val Pro Leu Tyr Pro Asp Thr His Arg Thr Gly Ala Ile Trp His
 50 55 60
 Ile Glu Ile Glu Gly Ile Ser Asp Gln Ser Ser Tyr Ala Phe Arg Val
 65 70 75 80
 His Gly Pro Lys Lys His Gly Met Gln Tyr Ser Phe Lys Glu Tyr Leu
 85 90 95
 Ala Asp Pro Tyr Ala Lys Asn Ile His Ser Pro Gln Ser Phe Gly Ser
 100 105 110
 Arg Lys Lys Gln Gly Asp Tyr Ala Phe Cys Tyr Leu Lys Glu Glu Pro
 115 120 125
 Phe Pro Trp Asp Gly Asp Gln Pro Leu His Leu Pro Lys Glu Glu Met
 130 135 140
 Ile Ile Tyr Glu Met His Val Arg Ser Phe Thr Gln Ser Ser Ser Ser
 145 150 155 160
 Arg Val His Ala Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys Ile Asp
 165 170 175
 His Leu His Lys Leu Gly Ile Asn Ala Val Glu Leu Leu Pro Ile Phe
 180 185 190
 Glu Phe Asp Glu Thr Ala His Pro Phe Arg Asn Ser Lys Phe Pro Tyr
 195 200 205
 Leu Cys Asn Tyr Trp Gly Tyr Ala Pro Leu Asn Phe Phe Ser Pro Cys
 210 215 220
 Arg Arg Tyr Ala Tyr Ala Ser Asp Pro Cys Ala Pro Ser Arg Glu Phe
 225 230 235 240
 Lys Thr Leu Val Lys Thr Leu His Gln Glu Gly Ile Glu Val Ile Leu
 245 250 255
 Asp Val Val Phe Asn His Thr Gly Leu Gln Gly Thr Thr Cys Ser Leu
 260 265 270
 Pro Trp Ile Asp Thr Pro Ser Tyr Tyr Ile Leu Asp Ala Gln Gly His
 275 280 285
 Phe Thr Asn Tyr Ser Gly Cys Gly Asn Thr Leu Asn Thr Asn Arg Ala
 290 295 300
 Pro Thr Thr Gln Trp Ile Leu Asp Ile Leu Arg Tyr Trp Val Glu Glu
 305 310 315 320
 Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe Ser Arg
 325 330 335

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Gly 340	Pro 341	Ser 342	Gly 343	Ser 344	Pro 345	Leu 346	Gln 347	Phe 348	Ala 349	Pro 350	Val 351	Leu 352	Glu 353	Ala 354	Ile 355
Ser 356	Phe 357	Asp 358	Pro 359	Leu 360	Leu 361	Ala 362	Ser 363	Thr 364	Lys 365	Ile 366	Ile 367	Ala 368	Glu 369	Pro 370	Trp 371
Asp 372	Ala 373	Gly 374	Gly 375	Leu 376	Tyr 377	Gln 378	Val 379	Gly 380	Tyr 381	Phe 382	Pro 383	Thr 384	Leu 385	Ser 386	Pro 387
Arg 388	Trp 389	Ser 390	Glu 391	Trp 392	Asn 393	Gly 394	Pro 395	Tyr 396	Arg 397	Asp 398	Asn 399	Val 400	Lys 401	Ala 402	Phe 403
Leu 404	Asn 405	Gly 406	Asp 407	Gln 408	Asn 409	Leu 410	Ile 411	Gly 412	Thr 413	Phe 414	Ala 415	Ser 416	Arg 417	Ile 418	Ser 419
Gly 420	Ser 421	Gln 422	Asp 423	Ile 424	Tyr 425	Pro 426	His 427	Gly 428	Ser 429	Pro 430	Thr 431	Asn 432	Ser 433	Ile 434	Asn 435
Tyr 436	Val 437	Ser 438	Cys 439	His 440	Asp 441	Gly 442	Phe 443	Thr 444	Leu 445	Cys 446	Asp 447	Thr 448	Val 449	Thr 450	Tyr 451
Asn 452	His 453	Lys 454	His 455	Asn 456	Glu 457	Ala 458	Asn 459	Gly 460	Glu 461	Asp 462	Asn 463	Arg 464	Asp 465	Gly 466	Thr 467
Asp 468	Ala 469	Asn 470	Tyr 471	Ser 472	Tyr 473	Asn 474	Phe 475	Gly 476	Thr 477	Glu 478	Gly 479	Lys 480	Thr 481	Glu 482	Asp 483
Pro 484	Gly 485	Ile 486	Leu 487	Glu 488	Val 489	Arg 490	Glu 491	Arg 492	Gln 493	Leu 494	Arg 495	Asn 496	Phe 497	Phe 498	Leu 499
Thr 500	Leu 501	Met 502	Val 503	Ser 504	Gln 505	Gly 506	Ile 507	Pro 508	Met 509	Ile 510	Gln 511	Ser 512	Gly 513	Asp 514	Glu 515
Tyr 516	Ala 517	His 518	Thr 519	Ala 520	Glu 521	Gly 522	Asn 523	Asn 524	Asn 525	Arg 526	Trp 527	Ala 528	Leu 529	Asp 530	Ser 531
Asn 532	Ala 533	Asn 534	Tyr 535	Phe 536	Leu 537	Trp 538	Asp 539	Gln 540	Leu 541	Thr 542	Ala 543	Lys 544	Pro 545	Thr 546	Leu 547
Met 548	His 549	Phe 550	Leu 551	Cys 552	Asp 553	Leu 554	Ile 555	Ala 556	Phe 557	Arg 558	Lys 559	Lys 560	Tyr 561	Lys 562	Thr 563
Leu 564	Phe 565	Asn 566	Arg 567	Gly 568	Phe 569	Leu 570	Ser 571	Asn 572	Lys 573	Glu 574	Ile 575	Ser 576	Trp 577	Val 578	Asp 579
Ala 580	Met 581	Gly 582	Asn 583	Pro 584	Met 585	Thr 586	Trp 587	Arg 588	Pro 589	Gly 590	Asn 591	Phe 592	Leu 593	Ala 594	Phe 595
Lys 596	Ile 597	Lys 598	Ser 599	Pro 600	Lys 601	Ala 602	His 603	Val 604	Tyr 605	Val 606	Ala 607	Phe 608	His 609	Val 610	Gly 611
Ala 612	Gln 613	Asp 614	Gln 615	Leu 616	Ala 617	Thr 618	Leu 619	Pro 620	Lys 621	Ala 622	Ser 623	Ser 624	Asn 625	Phe 626	Leu 627
Pro 628	Tyr 629	Gln 630	Ile 631	Val 632	Ala 633	Glu 634	Ser 635	Gln 636	Gln 637	Gly 638	Phe 639	Val 640	Pro 641	Gln 642	Asn 643

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Gln	Ile	Ala	Tyr	Asn	Phe	Leu	Phe	Ala	Leu	Ala	His	Gly	Asp	Val	Phe
			20					25					30		
Gly	Val	Asp	Arg	Gly	Val	Asp	Leu	Arg	Ile	Tyr	Asp	Val	Pro	Gly	Thr
		35					40					45			
Glu	Arg	Ala	Leu	Ser	Gly	Val	Arg	Met	Glu	Leu	Asp	Asp	Gly	Ala	Tyr
	50					55					60				
Pro	Leu	Leu	His	Arg	Leu	Arg	Val	Thr	Thr	Ser	Leu	Asn	Asp	Ala	Phe
65					70					75					80
Asp	Gly	Ile	Asp	Ala	Ala	Phe	Leu	Ile	Gly	Ala	Val	Pro	Arg	Gly	Pro
				85					90					95	
Gly	Met	Glu	Arg	Gly	Asp	Leu	Leu	Lys	Gln	Asn	Gly	Gln	Ile	Phe	Ser
			100					105					110		
Leu	Gln	Gly	Ala	Ala	Leu	Asn	Thr	Ala	Ala	Lys	Arg	Asp	Ala	Lys	Ile
		115					120					125			
Phe	Val	Val	Gly	Asn	Pro	Val	Asn	Thr	Asn	Cys	Trp	Ile	Ala	Met	Lys
	130					135					140				
His	Ala	Pro	Arg	Leu	His	Arg	Lys	Asn	Phe	His	Ala	Met	Leu	Arg	Leu
145					150					155					160
Asp	Gln	Asn	Arg	Met	His	Ser	Met	Leu	Ala	His	Arg	Ala	Glu	Val	Pro
				165					170					175	
Leu	Glu	Glu	Val	Ser	Arg	Val	Val	Ile	Trp	Gly	Asn	His	Ser	Ala	Lys
			180					185					190		
Gln	Val	Pro	Asp	Phe	Thr	Gln	Ala	Arg	Ile	Ser	Gly	Lys	Pro	Ala	Ala
		195					200					205			
Glu	Val	Ile	Gly	Asp	Arg	Asp	Trp	Leu	Glu	Asn	Ile	Leu	Val	His	Ser
	210					215					220				
Val	Gln	Asn	Arg	Gly	Ser	Ala	Val	Ile	Glu	Ala	Arg	Gly	Lys	Ser	Ser

225 230 235 240

Ala Ala Ser Ala Ser Arg Ala Leu Ala Glu Ala Ala Arg Ser Ile Phe
 245 250 255

Cys Pro Lys Ser Asp Glu Trp Phe Ser Ser Gly Val Cys Ser Asp His
 260 265 270

Asn Pro Tyr Gly Ile Pro Glu Asp Leu Ile Phe Gly Phe Pro Cys Arg
 275 280 285

Met Leu Pro Ser Gly Asp Tyr Glu Ile Ile Pro Gly Leu Pro Trp Glu
 290 295 300

Pro Phe Ile Arg Asn Lys Ile Gln Ile Ser Leu Asp Glu Ile Ala Gln
305 310 315 320

Glu Lys Ala Ser Val Ser Ser Leu
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<210> 403
<211> 217
<212> PRT
<213> Chlamydia pneumoniae

<400> 403
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 5 10 15

Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr Asn Leu Glu
 20 25 30

Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile Leu Lys Glu
 35 40 45

Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg Arg Ser Arg
50 55 60

Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr Leu Gln Val
65 70 75 80

Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu Gln Asp Glu
 85 90 95

Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys Ser Ser Ile
 100 105 110

Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu Tyr Arg Ile
115 120 125

Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala Glu Asn Pro
130 135 140

Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp Trp Ile Trp
145 150 155 160

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Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln Ala Trp Ser
 165 170 175
 Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala Ser Thr Leu
 180 185 190
 Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly Glu Arg Trp
 195 200 205
 Pro Glu Leu Val Asp Ile Val Ile Thr
 210 215

<210> 404
 <211> 270
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 404
 Met Ile Ile Ile Lys Asn Asn Glu Leu Met Ile Arg Arg Phe Phe Lys
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 Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser Leu Cys Tyr Ala Ser Ile
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 Leu Ile Val Leu Ser Ser Leu Val Cys Val Pro Thr Phe Cys Trp Leu
 35 40 45
 Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe Asn Pro Ser Pro Ile Arg
 50 55 60
 Asn Leu Phe Leu Val Ser Ser Thr Leu Ser Lys Val Pro Pro Thr Ala
 65 70 75 80
 Ile Ala Glu His Leu Arg Leu Ser Ala Asp Ala Pro Thr Tyr Leu His
 85 90 95
 Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser Leu His Ala Leu Gly Ile
 100 105 110
 Phe Ser Ser Leu Val Ile Glu Lys Ser Pro Asp Asn Lys Gly Ile Thr
 115 120 125
 Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala Tyr Val Gly Asn Arg Ser
 130 135 140
 Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys Phe Leu Gly Gln Pro Tyr
 145 150 155 160
 Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe Phe Ser Gln Glu Asp Leu
 165 170 175
 Lys Met Gln Lys Leu Pro Lys Glu Lys Met Leu Phe Thr Lys Ile Leu
 180 185 190
 Leu Lys Glu Leu Ala Met Glu Ser Pro Lys Ile Ile Asp Leu Ser Leu
 195 200 205

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Ser Asp Ala Tyr Pro Gly Glu Ile Ile Val Thr Leu Ser Ser Gly Ser
210 215 220

Leu Leu Arg Leu Pro Ile Lys Thr Leu Asp Arg Ala Leu Asp Leu Tyr
225 230 235 240

Lys His Met Lys Lys Ser Pro Val Ile Glu Ser Glu Lys Gln Tyr Val
245 250 255

Tyr Asp Leu Arg Phe Pro Asn Phe Leu Leu Leu Lys Ala Leu
260 265 270

<210> 405

<211> 651

<212> PRT

<213> Chlamydia pneumoniae

<400> 405

Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu Arg Thr
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Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala Ala Asn
20 25 30

Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys Pro Lys
35 40 45

Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg Ser Ala
50 55 60

Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala Ser Ser
65 70 75 80

Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser Thr Thr
85 90 95

Ala Thr Ala Pro Thr Pro Pro Pro Thr Phe Asp Asp Tyr Lys Thr
100 105 110

Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser Leu Ala
115 120 125

Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr Asn Ile
130 135 140

Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala Glu Trp
145 150 155 160

Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile Thr Glu
165 170 175

Leu Ala Lys Tyr Ala Ser Asp Asn Gln Ala Ile Leu Asp Ser Leu Gly
180 185 190

Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln Ser Val

195					200					205					
Ala	Asn	Asn	Asn	Lys	Ala	Ala	Glu	Leu	Leu	Lys	Glu	Met	Gln	Asp	Asn
	210					215					220				
Pro	Val	Val	Pro	Gly	Lys	Thr	Pro	Ala	Ile	Ala	Gln	Ser	Leu	Val	Asp
	225					230					235				240
Gln	Thr	Asp	Ala	Thr	Ala	Thr	Gln	Ile	Glu	Lys	Asp	Gly	Asn	Ala	Ile
				245					250					255	
Arg	Asp	Ala	Tyr	Phe	Ala	Gly	Gln	Asn	Ala	Ser	Gly	Ala	Val	Glu	Asn
			260					265					270		
Ala	Lys	Ser	Asn	Asn	Ser	Ile	Ser	Asn	Ile	Asp	Ser	Ala	Lys	Ala	Ala
			275					280				285			
Ile	Ala	Thr	Ala	Lys	Thr	Gln	Ile	Ala	Glu	Ala	Gln	Lys	Lys	Phe	Pro
	290					295					300				
Asp	Ser	Pro	Ile	Leu	Gln	Glu	Ala	Glu	Gln	Met	Val	Ile	Gln	Ala	Glu
	305					310					315				320
Lys	Asp	Leu	Lys	Asn	Ile	Lys	Pro	Ala	Asp	Gly	Ser	Asp	Val	Pro	Asn
				325					330					335	
Pro	Gly	Thr	Thr	Val	Gly	Gly	Ser	Lys	Gln	Gln	Gly	Ser	Ser	Ile	Gly
			340					345					350		
Ser	Ile	Arg	Val	Ser	Met	Leu	Leu	Asp	Asp	Ala	Glu	Asn	Glu	Thr	Ala
			355				360					365			
Ser	Ile	Leu	Met	Ser	Gly	Phe	Arg	Gln	Met	Ile	His	Met	Phe	Asn	Thr
	370					375					380				
Glu	Asn	Pro	Asp	Ser	Gln	Ala	Ala	Gln	Gln	Glu	Leu	Ala	Ala	Gln	Ala
	385					390					395				400
Arg	Ala	Ala	Lys	Ala	Ala	Gly	Asp	Asp	Ser	Ala	Ala	Ala	Ala	Leu	Ala
				405					410					415	
Asp	Ala	Gln	Lys	Ala	Leu	Glu	Ala	Ala	Leu	Gly	Lys	Ala	Gly	Gln	Gln
			420				425						430		
Gln	Gly	Ile	Leu	Asn	Ala	Leu	Gly	Gln	Ile	Ala	Ser	Ala	Ala	Val	Val
		435					440					445			
Ser	Ala	Gly	Val	Pro	Pro	Ala	Ala	Ala	Ser	Ser	Ile	Gly	Ser	Ser	Val
	450					455					460				
Lys	Gln	Leu	Tyr	Lys	Thr	Ser	Lys	Ser	Thr	Gly	Ser	Asp	Tyr	Lys	Thr
	465					470					475				480
Gln	Ile	Ser	Ala	Gly	Tyr	Asp	Ala	Tyr	Lys	Ser	Ile	Asn	Asp	Ala	Tyr
				485					490					495	
Gly	Arg	Ala	Arg	Asn	Asp	Ala	Thr	Arg	Asp	Val	Ile	Asn	Asn	Val	Ser

500	505	510
Thr Pro Ala Leu Thr Arg Ser Val	Pro Arg Ala Arg Thr Glu Ala Arg	
515	520	525
Gly Pro Glu Lys Thr Asp Gln Ala Leu Ala Arg Val Ile Ser Gly Asn		
530	535	540
Ser Arg Thr Leu Gly Asp Val Tyr Ser Gln Val Ser Ala Leu Gln Ser		
545	550	555
Val Met Gln Ile Ile Gln Ser Asn Pro Gln Ala Asn Asn Glu Glu Ile		
565	570	575
Arg Gln Lys Leu Thr Ser Ala Val Thr Lys Pro Pro Gln Phe Gly Tyr		
580	585	590
Pro Tyr Val Gln Leu Ser Asn Asp Ser Thr Gln Lys Phe Ile Ala Lys		
595	600	605
Leu Glu Ser Leu Phe Ala Glu Gly Ser Arg Thr Ala Ala Glu Ile Lys		
610	615	620
Ala Leu Ser Phe Glu Thr Asn Ser Leu Phe Ile Gln Gln Val Leu Val		
625	630	635
Asn Ile Gly Ser Leu Tyr Ser Gly Tyr Leu Gln		
645	650	

<210> 406
 <211> 1074
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 406
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 ctcttaaaga agcaagggga gtataatgtt gttgggctct tcatgaaaaa ttggggagag 120
 caggacgaga atggtgagtg tactgcaacc aaagattttc gcgatgtaga gcggatcgca 180
 gaacaattgt ccattccata ttacacagtt tccttttcta aggaatataa agagcgagtg 240
 ttttctagat ttctaagaga atatgcgaac ggctacactc ccaatcctga tgtgttatgc 300
 aatcgagaaa tcaaatttga tttattacag aagaaggtag gtgagctaaa aggtgatttt 360
 ttagccacgg gacattattg tcgaggaggg gctgatggaa ctggtttgtc cagaggaata 420
 gacccaata aagaccaaag ttattttctta tgtggcactc ctaaggatgc tttatccaat 480
 gtacttttcc ccctgggagg tatgtataaa acggaggtag gtcgaattgc tcaagaagct 540
 ggttttagcta ccgccacaaa aaaagatagc acagggattt gcttcattgg taaacggcct 600
 ttttaagagt ttcttgagca gttttagtag gactctcctg gagacattat tgattttgat 660
 acacaacagg tagtcggccg acatgaagga gccattatt atacgattgg acagcgtcga 720
 ggggttaaaca taggaggaat ggaaaagcct tggtatgttc ttagcaagaa tatggaaaag 780
 aatattgttt acattgtaag ggggtgaagat catcctttac tttatcgaca agagctttta 840
 gctaaggaaac ttaattggtt tgttcccttg caggagccta tgatctgtag tgctaaagtt 900
 cggtagacag cccctgacga gaaatgttct gtatatcctt tggaagatgg aacggtaaaa 960
 gtgattttcg atgtccctgt gaaagctgtc acccctggac agactgtagc tttctaccag 1020
 ggggacattt gtttaggagg aggagtgatt gaagtgccta tgattcatca gctg 1074

<210> 407

<211> 1827
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 407
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 ttttcttctg ccatacattc tcctgtacaa ggagaaagct tggtttgcaa gaatgctctt 120
 caagatttga gtttttttaga gcattttatta caggttaaata atgctcctaa aacatggaaa 180
 gagcaatact taggatggga tcttggtcaa agctccgttt ctgcacagca gaagcttcgt 240
 acacaagaaa atccatcaac aagtttttgc cagcaggtcc ttgctgattt tatcggagga 300
 ttaaatgact ttcacgctgg agtaactttc tttgcgatag aaagtgtta ccttccttat 360
 accgtacaaa aaagtagtga cggccgtttc tactttgtag atatcatgac tttttcttca 420
 gagatccgtg ttggagatga gttgctagag gtggatgggg cgctgtcca agatgtactc 480
 gctactctat atggaagcaa tcacaaaggg actgcagctg aagagtccgc tgccttaaga 540
 acactatttt ctgcgatggc ctcttttagg cacaagtagc cttctgggcg cactacttta 600
 aagattcgtc gtccttttgg tactacgaga gaagttcgtg tgaaatggcg ttatgttctt 660
 gaaggtgtag gagatttggc taccatagct ccttctatca gggctccaca gttacagaaa 720
 tcgatgagaa gctttttccc taagaaagat gatgcgtttc atcgggtctag ttcgctattc 780
 tactctccaa tggttccgca tttttgggca gagcttcgca atcattatgc aacgagtggg 840
 ttgaaaagcg ggtacaatat tgggagtacc gatgggtttc tcctgtcat tgggcctgtt 900
 atatgggagt cggaggggtct tttccgcgct tatatttctt cggtgactga tggggatggg 960
 aagagccata aagtaggatt tctaagaatt cctacatata gttggcagga catggaagat 1020
 tttgatcctt caggaccgcc tccttgggaa gaatttgcta agattattca agtattttct 1080
 tctaatacag aagcttttgc tatcgaccaa acgaacaacc caggtggtag tgcctttat 1140
 ctttatgcac tgctttccat gttgacagac cgtccttttag aacttcctaa acatagaatg 1200
 attctgactc aggatgaagt ggttgatgct ttagattggg taaccctgtt ggaaaacgta 1260
 gacacaaacg tggagtctcg ccttgctctg ggagacaaca tggaggata tactgtggat 1320
 ctacaggttg ccgagtattt aaaaagcttt ggacgtcaag tattgaattg ttggagtaaa 1380
 ggggatatcg agttatcaac gcctattcct ctttttgggt ttgagaagat tcatccacat 1440
 cctcgagttc aatactctaa accgatttgt gttttgatca atgagcaaga cttttcttgt 1500
 gctgacttct tcctgtagt tttgaaagac aatgatcgag ctcttattgt tggtagctga 1560
 acagctggag ctggaggatt tgtctttaat tgcagttcc caaatagaac tggaaataaa 1620
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 ggagtcgaac cgcataatga tctgcctttt acagcgaatg atattcgcta taaaggctat 1740
 tccgagtatc ttgataaggt caaaaaattg gtttgcagc tgatcaataa cgacggtacc 1800
 attattcttg cggaagatgg tagtttt 1827

<210> 408
 <211> 804
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 408
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 ccgaattatt ctcttcccta cgctttcctg tgtatcttcg ttagcgttct cgtcttttta 120
 cccatcggtt tatggctgac tctgcctagt tttttaaatt tcaagcactc cctaacgcct 180
 attaagacat tgtttcttac ctgtacggag cctccttgcc ttcctgagcc ttttttctcg 240
 gatattcttg atctttctgc tgattccctt ccagctttac agacattttc cacgaagtct 300
 gccgagcact ttttaaatga attaggagtt tttcttttta tttctattga gaaggttcct 360
 gatcataaag gcttagctat ttctatgct ttgcatactc cgttagcttt tttaggaaat 420
 caaactcata cattcatagg ttatgaagga caaaccttcc cagctttgccc cttttttcaa 480
 tccttagaac tacctacagt cttcttttgc caacaagctc tttcccaaac acgcattcca 540
 catcaaacac tgtctattgt cagcagccta atagatcaac tacagatgga tcctcctagc 600
 atcattgact tatctcaaat cgatcattat cggggagaat ttgtggtatc cttatcttct 660
 ggaacactct tacgttttgc taaagactct ttccttccctg gaatccaaca ctatcaacaa 720
 gactctctc taggagcctt ctctcctcaa caagctgtca tttgcgacct tcgttgcgaa 780
 gactatcttt tacttaaacg taaa 804

<210> 409
 <211> 663
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 409
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 ggattgagca gctgttgccg caactcttat ggatcgactc ttgcaaaaaa tacagccgag 120
 ataaaagaag aatctgttac acttcgcgag aagccggatg ccggctgtaa aaagaaatct 180
 tcttggtact tgagaaaatt tttctgcgcg aagaaaccta aagagaagac agagcctgtg 240
 ttgccgaact ttaagtctta cgcagatcca atgacagatt ccgaaagaaa agacctttct 300
 ttcgtagtat ctgctgctgc tgataagtct tctattgctt tggctatggc tcagggggaa 360
 attaaaggcg cattatcgcg tattagagag atccatcctc ttgcattgtt acaagctctt 420
 gcagaagatc ctgctttaat tgctggaatg aaaaagatgc aaggacggga ttgggtctgg 480
 aatatcttta tcacagaatt aagcaaagtt ttttctcaag cagcatcttt aggggctttc 540
 agcgttgccg acgttgccgc gttcgcgctc accttaggat tagactcggg gaccgttacc 600
 tcaattgttg atggggaaaag gtgggctgag ctgatcgatg tcgtgattca gaaccctgct 660
 ata 663

<210> 410
 <211> 1470
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 410
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 ttggaacgtg caatccctca tgttttagat ggcctcaagc ctgttcaaag aaggcttctt 120
 tggaccttat tccgtatgga tgatggtaaa atgcataagg tggctaatat cgcaggacgt 180
 acgatggcgc tgcacccgca tgggtgatgcg cctatcgtgg aagctcttgt cgttttggca 240
 aataaagggt tcctgataga gacacaaggg aactttggta accctctcac aggagatcct 300
 catgcagcgg ctgcttatat agaagcgcgg ctaagccctt tagctaaaga ggtacttttt 360
 aatacggatc tcatgacctt ccatgattct tacgatggaa gagagcaaga acccgatatc 420
 ttagctgcaa agattcctct actactcctt catggcgtgg atggcatcgc agtagggatg 480
 actacaaaaa ttttccctca caacttttgt gatctactag aagcacaat agctatactg 540
 aatgaccaac cgttttctct ccttcccgac ttccctccag gaggcacgat ggatgcttcc 600
 gactaccaag atggcttagg atccattgtt ctgcgcgcaa caattgatat tattaatgac 660
 aaaaccttgc taatcaaaga aatctgtcct tccacaacta cagagactct aattcgttct 720
 atcgaaaacg cagcaaaacg aggaatcatt aaaatcgatt cgattcaaga tttctctacg 780
 gacctccctc atatcgagat caaactccct aaaggatatc acgctaaaga tctgttacgc 840
 cctctatata cacatacaga atgtcagggt atcttaacct ctcgccaac agctatttac 900
 cagggaatac cttgggaac aacgatcagc gaaatcctac gcttacaac caagactctc 960
 caaaattacc taaaaaaaga attactcata ctagaagatt ccttaagccg cgagctgtac 1020
 caaaaaactt tagaatatct attcattaaa cataagcttt acgataccgt gcgctccatg 1080
 ctttctaaaa gaaagacgtc tcttcatca agtaccattc acaacgctgt tttggaagct 1140
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 gctctaacta ttaaaaaaat cctctgtttt gatgaaaatt cctacgagaa ggagctggca 1260
 tgcttagaaa agaaacgcag tagcgtacag aaagatctga gccaaactgaa aaaatacaca 1320
 gttctctaca ttaagaagct gctcgaaacc tacagacaac tcgggcatcg aaagacaaaa 1380
 attgcaaat ttgatgacct acctaccgag agagtctccg ctcataagaa agcaaaaagaa 1440
 ctgctgcgc tcgatcaaga agagaacttc 1470

<210> 411
 <211> 234
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 411
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 ctgaaagagg tgcagggaac caatacgatt atctacgaat tgactgttgc taagggagat 120
 atcggtaaaa ttatcggtaa agaaggacgc actattaagg ctatccgtac tttattggtt 180
 tccgtagcaa gtcgagataa tgtgaaagtc agcctagaaa ttatggaaga gcgg 234

<210> 412
 <211> 1941
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 412
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 gggcaaatcg cttctaattc ggagaccaa gagtccacga aggagtcaga agcagagtcct 120
 tcagcatcgt cctctgtaag cagctggagt tttttatcct cagcaaagca tgcattaatc 180
 tctcttcgtg atgccatctt gaataaaaaa tctagtccaa cagactctct ctctcaatta 240
 gaggcctcta cttctacctc tacggttaca cgtgtagctg cgcgagatta taatgaggct 300
 aaatcgaatt ttgatacggc gaaaagtggg tttagagaacg ctacgacact tgctgaatac 360
 gagacgaaaa tggctgattt aatggcagct ctccaagata tggagcgttt ggctaaacag 420
 aaggctgaag ttacaagaat taaagaagct cttcaagaga aacaagaggt tattgataag 480
 ctcaatcagt tagttaaact tgaaaaacag aatcagactt taaaggaaac ttttaacaacc 540
 acagactctg cagatcagat tccagcgatt aatagtcagt tagagatcaa caaaaattct 600
 gcagatcaaa ttatcaaaga tctggaagga caaaacataa gttatgaagc tgttctcact 660
 aacgcaggag aggttatcaa agcttcttct gaagcgggaa ttaagttagg acaagctttg 720
 cagctctattg tggatgctgg ggatcaaagc caggctgcag ttcttcaagc acagcaaat 780
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<210> 413
 <211> 693
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 414

<211> 1599

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 414

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<210> 415

<211> 1395

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 415

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<210> 416

<211> 366

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 416

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aagaaa 366

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<210> 417

<211> 1659

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 417

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<210> 418
 <211> 576
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<400> 418
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<210> 419
 <211> 825
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<400> 419
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<210> 420
 <211> 5310
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<400> 420
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<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 421

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<211> 1980

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 422

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<211> 978

<212> DNA

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<212> DNA

<213> Chlamydia trachomatis serovar D

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<210> 426

<211> 894

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 426

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acctgggttc ctatctataa aattttctct caatctttgg agttaggaaa attcaatgca 180

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tctcgtgaac tctccaatgg agaattgcta acttttcgcta aaatctatcc catggatgcc 240
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 cttttctgggt acaactgtatc cgaagttgta gaacaggtga aaaaacattt tggacacatt 360
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 atctcggcag ggccattagc tagccgtgca ggaaaagcta ttggatttat tgagagaatg 720
 gtggattact accaagactg ggctccacta ccttctccaa tgggaagctga gcaagtaggc 780
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<210> 427

<211> 894

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 427

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 ttttttctaa ctggcagata tttttcttat gcatatctc tttttcaaaa cttttcgggt 180
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 ggattagggga aaacatctca ggaactcaaa gcgattcttg atgctgtgta ttttcctaca 420
 ccagaagctg cgcgactgct ggtggatgtt cagggacatt tatcagaaga attttcttat 480
 gaagattttg ccattgccaa atttttcggg gagagagagg aagtgaagaa aattatggat 540
 agatttattc aatctccaga agtttcttca caggtaacca tgaattacat gcgttggcct 600
 tttgatttca aatacgcagt gcttttactt actttaaaag atgtttcaaa aggttttgct 660
 gtagatcaag ttgttcagac cttctataaa gagaataagc cttttattat ggcttctggg 720
 gatgatgcta acgatatcga cctgctatct cgaggagatt ttaaaattgt tatacagacg 780
 gctccagagg agatgcatgg attagcggac tttttggctc ccccggcgaa ggattttggg 840
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<210> 428

<211> 459

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 428

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 ggttaggatgc taggctcttt acttctcctg ttagggatat ttggaggggg gtgtttgcta 180
 tttcgacgtt ttttgcgttc ccgcggacat cttcctagcg gcaattcgtc cattaagatt 240
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 acttttagttg ttgctgagag aggagagcga gtgaccttat tatctgaatt tcctccgaat 360
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<210> 429

<211> 1707

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 429

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 acagaagaag aaccactag cgaagtacat cctgggtgca tcctaaaagg tacagttggt 180
 gacataagca aagactttgt tgtttagat gtcggcttaa aatctgaggg agttattcct 240
 atgtctgagt ttatcgactc ttcagaaggt ttaactgtcg gagccgaagt cgaagtttac 300
 ctagaccaaa ctgaggatga cgaaggaaaa gttgttttat ccagagaaaa agcaacaaga 360
 caacgacaat ggggaatacat tcttgctcac tgcgaggaag gttctattgt taagggacaa 420
 attacccgaa aagttaaggg tggtttgatc gtagatattg gtatggaagc cttccttcca 480
 ggatcccaaa tagacaataa gaagatcaag aacttagatg attacgtagg caaggtttgt 540
 gagttcaaaa ttctcaaaat caacgtagat cgtcggaacg ttgttgatc tagaagagaa 600
 cttctcgaag ctgaacgcat ttctaagaaa gcagagttga tcgagcaaat cactatcggg 660
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 gcggaagaag aatcttctga cagagac 1707

<210> 430

<211> 1998

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 430

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 tctaagaata tctactcccc tcaactattt ggatccccta aacaagaaaa ggattacgca 360
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 caggtttccc atcctggaac tttccttggg attatcgaaa aaatagacca cctcaaaca 540
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 aatcatacag gctttgaagg cacaagctgc cctcttccct ggatagatct agaactcctat 840
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Thr	Arg	Glu	Val	Arg	Val	Lys	Trp	Arg	Tyr	Val	Pro	Glu	Gly	Val	Gly
210						215					220				
Asp	Leu	Ala	Thr	Ile	Ala	Pro	Ser	Ile	Arg	Ala	Pro	Gln	Leu	Gln	Lys
225					230					235					240
Ser	Met	Arg	Ser	Phe	Phe	Pro	Lys	Lys	Asp	Asp	Ala	Phe	His	Arg	Ser
				245					250					255	
Ser	Ser	Leu	Phe	Tyr	Ser	Pro	Met	Val	Pro	His	Phe	Trp	Ala	Glu	Leu
			260					265					270		
Arg	Asn	His	Tyr	Ala	Thr	Ser	Gly	Leu	Lys	Ser	Gly	Tyr	Asn	Ile	Gly
		275					280					285			
Ser	Thr	Asp	Gly	Phe	Leu	Pro	Val	Ile	Gly	Pro	Val	Ile	Trp	Glu	Ser
	290					295					300				
Glu	Gly	Leu	Phe	Arg	Ala	Tyr	Ile	Ser	Ser	Val	Thr	Asp	Gly	Asp	Gly
305					310					315					320
Lys	Ser	His	Lys	Val	Gly	Phe	Leu	Arg	Ile	Pro	Thr	Tyr	Ser	Trp	Gln
				325					330					335	
Asp	Met	Glu	Asp	Phe	Asp	Pro	Ser	Gly	Pro	Pro	Pro	Trp	Glu	Glu	Phe
			340					345					350		
Ala	Lys	Ile	Ile	Gln	Val	Phe	Ser	Ser	Asn	Thr	Glu	Ala	Leu	Ile	Ile
		355					360					365			
Asp	Gln	Thr	Asn	Asn	Pro	Gly	Gly	Ser	Val	Leu	Tyr	Leu	Tyr	Ala	Leu
	370					375					380				
Leu	Ser	Met	Leu	Thr	Asp	Arg	Pro	Leu	Glu	Leu	Pro	Lys	His	Arg	Met
385					390					395					400
Ile	Leu	Thr	Gln	Asp	Glu	Val	Val	Asp	Ala	Leu	Asp	Trp	Leu	Thr	Leu
				405					410					415	
Leu	Glu	Asn	Val	Asp	Thr	Asn	Val	Glu	Ser	Arg	Leu	Ala	Leu	Gly	Asp
			420					425					430		
Asn	Met	Glu	Gly	Tyr	Thr	Val	Asp	Leu	Gln	Val	Ala	Glu	Tyr	Leu	Lys
		435					440					445			
Ser	Phe	Gly	Arg	Gln	Val	Leu	Asn	Cys	Trp	Ser	Lys	Gly	Asp	Ile	Glu
	450					455					460				
Leu	Ser	Thr	Pro	Ile	Pro	Leu	Phe	Gly	Phe	Glu	Lys	Ile	His	Pro	His
465					470					475					480
Pro	Arg	Val	Gln	Tyr	Ser	Lys	Pro	Ile	Cys	Val	Leu	Ile	Asn	Glu	Gln
				485					490					495	
Asp	Phe	Ser	Cys	Ala	Asp	Phe	Phe	Pro	Val	Val	Leu	Lys	Asp	Asn	Asp
			500					505					510		

145 150 155 160
 Ser Leu Glu Leu Pro Thr Val Phe Phe Ser Gln Gln Ala Leu Ser Gln
 165 170 175
 Thr Arg Ile Pro His Gln Thr Leu Ser Ile Val Thr Ser Leu Ile Asp
 180 185 190
 Gln Leu Gln Met Asp Pro Pro Ser Ile Ile Asp Leu Ser Gln Ile Asp
 195 200 205
 His Tyr Pro Gly Glu Phe Val Val Ser Leu Ser Ser Gly Thr Leu Leu
 210 215 220
 Arg Phe Arg Lys Asp Ser Phe Leu Pro Gly Ile Gln His Tyr Gln Gln
 225 230 235 240
 Ala Leu Ser Leu Gly Ala Phe Ser Pro Gln Gln Ala Val Ile Cys Asp
 245 250 255
 Leu Arg Cys Glu Asp Tyr Leu Leu Leu Lys Arg Lys
 260 265

<210> 433
 <211> 221
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 433
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 Ser Gly Leu Ser Gly Leu Ser Ser Cys Cys Ala Asn Ser Tyr Gly Ser
 20 25 30
 Thr Leu Ala Lys Asn Thr Ala Glu Ile Lys Glu Glu Ser Val Thr Leu
 35 40 45
 Arg Glu Lys Pro Asp Ala Gly Cys Lys Lys Lys Ser Ser Cys Tyr Leu
 50 55 60
 Arg Lys Phe Phe Ser Arg Lys Lys Pro Lys Glu Lys Thr Glu Pro Val
 65 70 75 80
 Leu Pro Asn Phe Lys Ser Tyr Ala Asp Pro Met Thr Asp Ser Glu Arg
 85 90 95
 Lys Asp Leu Ser Phe Val Val Ser Ala Ala Ala Asp Lys Ser Ser Ile
 100 105 110
 Ala Leu Ala Met Ala Gln Gly Glu Ile Lys Gly Ala Leu Ser Arg Ile
 115 120 125
 Arg Glu Ile His Pro Leu Ala Leu Leu Gln Ala Leu Ala Glu Asp Pro
 130 135 140

Ala Leu Ile Ala Gly Met Lys Lys Met Gln Gly Arg Asp Trp Val Trp
 145 150 155 160
 Asn Ile Phe Ile Thr Glu Leu Ser Lys Val Phe Ser Gln Ala Ala Ser
 165 170 175
 Leu Gly Ala Phe Ser Val Ala Asp Val Ala Ala Phe Ala Ser Thr Leu
 180 185 190
 Gly Leu Asp Ser Gly Thr Val Thr Ser Ile Val Asp Gly Glu Arg Trp
 195 200 205
 Ala Glu Leu Ile Asp Val Val Ile Gln Asn Pro Ala Ile
 210 215 220

<210> 434

<211> 490

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 434

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 Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Val Leu Asp Gly Leu
 20 25 30
 Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Arg Met Asp Asp
 35 40 45
 Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala Leu
 50 55 60
 His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu Ala
 65 70 75 80
 Asn Lys Gly Phe Leu Ile Glu Thr Gln Gly Asn Phe Gly Asn Pro Leu
 85 90 95
 Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu Ser
 100 105 110
 Pro Leu Ala Lys Glu Val Leu Phe Asn Thr Asp Leu Met Thr Phe His
 115 120 125
 Asp Ser Tyr Asp Gly Arg Glu Gln Glu Pro Asp Ile Leu Ala Ala Lys
 130 135 140
 Ile Pro Leu Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly Met
 145 150 155 160
 Thr Thr Lys Ile Phe Pro His Asn Phe Cys Asp Leu Leu Glu Ala Gln
 165 170 175
 Ile Ala Ile Leu Asn Asp Gln Pro Phe Ser Leu Leu Pro Asp Phe Pro
 180 185 190

Pro	Gly	Gly	Thr	Met	Asp	Ala	Ser	Asp	Tyr	Gln	Asp	Gly	Leu	Gly	Ser
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Ile	Val	Leu	Arg	Ala	Thr	Ile	Asp	Ile	Ile	Asn	Asp	Lys	Thr	Leu	Leu
	210					215					220				
Ile	Lys	Glu	Ile	Cys	Pro	Ser	Thr	Thr	Thr	Glu	Thr	Leu	Ile	Arg	Ser
225					230					235					240
Ile	Glu	Asn	Ala	Ala	Lys	Arg	Gly	Ile	Ile	Lys	Ile	Asp	Ser	Ile	Gln
				245					250					255	
Asp	Phe	Ser	Thr	Asp	Leu	Pro	His	Ile	Glu	Ile	Lys	Leu	Pro	Lys	Gly
			260					265					270		
Ile	Tyr	Ala	Lys	Asp	Leu	Leu	Arg	Pro	Leu	Tyr	Thr	His	Thr	Glu	Cys
		275					280					285			
Gln	Val	Ile	Leu	Thr	Ser	Arg	Pro	Thr	Ala	Ile	Tyr	Gln	Gly	Lys	Pro
	290					295					300				
Trp	Glu	Thr	Thr	Ile	Ser	Glu	Ile	Leu	Arg	Leu	Gln	Thr	Lys	Thr	Leu
305					310					315					320
Gln	Asn	Tyr	Leu	Lys	Lys	Glu	Leu	Leu	Ile	Leu	Glu	Asp	Ser	Leu	Ser
				325					330					335	
Arg	Glu	Leu	Tyr	His	Lys	Thr	Leu	Glu	Tyr	Leu	Phe	Ile	Lys	His	Lys
			340					345					350		
Leu	Tyr	Asp	Thr	Val	Arg	Ser	Met	Leu	Ser	Lys	Arg	Lys	Thr	Ser	Pro
		355					360					365			
Ser	Ser	Ser	Thr	Ile	His	Asn	Ala	Val	Leu	Glu	Ala	Leu	Thr	Pro	Phe
		370				375					380				
Leu	Asp	Thr	Leu	Pro	Ala	Pro	Asp	Lys	Gln	Ala	Thr	Ala	Gln	Leu	Ala
385					390					395					400
Ala	Leu	Thr	Ile	Lys	Lys	Ile	Leu	Cys	Phe	Asp	Glu	Asn	Ser	Tyr	Glu
				405					410					415	
Lys	Glu	Leu	Ala	Cys	Leu	Glu	Lys	Lys	Arg	Ser	Ser	Val	Gln	Lys	Asp
			420					425					430		
Leu	Ser	Gln	Leu	Lys	Lys	Tyr	Thr	Val	Leu	Tyr	Ile	Lys	Lys	Leu	Leu
		435					440					445			
Glu	Thr	Tyr	Arg	Gln	Leu	Gly	His	Arg	Lys	Thr	Lys	Ile	Ala	Lys	Phe
		450				455					460				
Asp	Asp	Leu	Pro	Thr	Glu	Arg	Val	Ser	Ala	His	Lys	Lys	Ala	Lys	Glu
465					470					475					480
Leu	Ala	Ala	Leu	Asp	Gln	Glu	Glu	Asn	Phe						
				485					490						

<210> 435
 <211> 78
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 435
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 Glu Glu Val His Leu Lys Glu Val Gln Gly Thr Asn Thr Ile Ile Tyr
 20 25 30
 Glu Leu Thr Val Ala Lys Gly Asp Ile Gly Lys Ile Ile Gly Lys Glu
 35 40 45
 Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val Ser Val Ala Ser
 50 55 60
 Arg Asp Asn Val Lys Val Ser Leu Glu Ile Met Glu Glu Arg
 65 70 75

<210> 436
 <211> 647
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 436
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 20 25 30
 Thr Lys Glu Ser Glu Ala Ser Pro Ser Ala Ser Ser Ser Val Ser Ser
 35 40 45
 Trp Ser Phe Leu Ser Ser Ala Lys His Ala Leu Ile Ser Leu Arg Asp
 50 55 60
 Ala Ile Leu Asn Lys Asn Ser Ser Pro Thr Asp Ser Leu Ser Gln Leu
 65 70 75 80
 Glu Ala Ser Thr Ser Thr Ser Thr Val Thr Arg Val Ala Ala Arg Asp
 85 90 95
 Tyr Asn Glu Ala Lys Ser Asn Phe Asp Thr Ala Lys Ser Gly Leu Glu
 100 105 110
 Asn Ala Thr Thr Leu Ala Glu Tyr Glu Thr Lys Met Ala Asp Leu Met
 115 120 125
 Ala Ala Leu Gln Asp Met Glu Arg Leu Ala Lys Gln Lys Ala Glu Val
 130 135 140

0964133-042301

Thr 145	Arg	Ile	Lys	Glu	Ala 150	Leu	Gln	Glu	Lys	Gln 155	Glu	Val	Ile	Asp	Lys 160
Leu	Asn	Gln	Leu	Val 165	Lys	Leu	Glu	Lys	Gln 170	Asn	Gln	Thr	Leu	Lys 175	Glu
Thr	Leu	Thr	Thr 180	Thr	Asp	Ser	Ala	Asp 185	Gln	Ile	Pro	Ala	Ile 190	Asn	Ser
Gln	Leu	Glu 195	Ile	Asn	Lys	Asn	Ser 200	Ala	Asp	Gln	Ile	Ile 205	Lys	Asp	Leu
Glu	Gly 210	Gln	Asn	Ile	Ser	Tyr 215	Glu	Ala	Val	Leu	Thr 220	Asn	Ala	Gly	Glu
Val 225	Ile	Lys	Ala	Ser	Ser 230	Glu	Ala	Gly	Ile	Lys 235	Leu	Gly	Gln	Ala	Leu 240
Gln	Ser	Ile	Val	Asp 245	Ala	Gly	Asp	Gln	Ser 250	Gln	Ala	Ala	Val	Leu 255	Gln
Ala	Gln	Gln	Asn 260	Asn	Ser	Pro	Asp	Asn 265	Ile	Ala	Ala	Thr	Lys 270	Lys	Leu
Ile	Asp	Ala 275	Ala	Glu	Thr	Lys	Val 280	Asn	Glu	Leu	Lys	Gln 285	Glu	His	Thr
Gly	Leu 290	Thr	Asp	Ser	Pro	Leu 295	Val	Lys	Lys	Ala	Glu 300	Glu	Gln	Ile	Ser
Gln 305	Ala	Gln	Lys	Asp	Ile 310	Gln	Glu	Ile	Lys	Pro 315	Ser	Gly	Ser	Asp	Ile 320
Pro	Ile	Val	Gly	Pro 325	Ser	Gly	Ser	Ala	Ala 330	Ser	Ala	Gly	Ser	Ala 335	Val
Gly	Ala	Leu	Lys 340	Ser	Ser	Asn	Asn	Ser 345	Gly	Arg	Ile	Ser	Leu 350	Leu	Leu
Asp	Asp	Val 355	Asp	Asn	Glu	Met	Ala 360	Ala	Ile	Ala	Met	Gln 365	Gly	Phe	Arg
Ser	Met 370	Ile	Glu	Gln	Phe	Asn 375	Val	Asn	Asn	Pro	Ala 380	Thr	Ala	Lys	Glu
Leu 385	Gln	Ala	Met	Glu	Ala 390	Gln	Leu	Thr	Ala	Met 395	Ser	Asp	Gln	Leu	Val 400
Gly	Ala	Asp	Gly	Glu 405	Leu	Pro	Ala	Glu	Ile 410	Gln	Ala	Ile	Lys	Asp 415	Ala
Leu	Ala	Gln	Ala 420	Leu	Lys	Gln	Pro	Ser 425	Thr	Asp	Gly	Leu	Ala 430	Thr	Ala
Met	Gly	Gln 435	Val	Ala	Phe	Ala	Ala 440	Ala	Lys	Val	Gly	Gly 445	Gly	Ser	Ala

Gly Thr Ala Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr Lys Thr
 450 455 460
 Ala Phe Ser Ser Thr Ser Ser Ser Ser Tyr Ala Ala Ala Leu Ser Asp
 465 470 475 480
 Gly Tyr Ser Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu Ser Arg
 485 490 495
 Ser Gly Val Gln Ser Ala Ile Ser Gln Thr Ala Asn Pro Ala Leu Ser
 500 505 510
 Arg Ser Val Ser Arg Ser Gly Ile Glu Ser Gln Gly Arg Ser Ala Asp
 515 520 525
 Ala Ser Gln Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln Thr Leu
 530 535 540
 Gly Asp Val Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met Ser Thr
 545 550 555 560
 Ile Val Ser Asn Pro Gln Val Asn Gln Glu Glu Ile Met Gln Lys Leu
 565 570 575
 Thr Ala Ser Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala Val Gln
 580 585 590
 Asn Ser Ala Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu Arg Glu
 595 600 605
 Phe Val Asp Gly Glu Arg Ser Leu Ala Glu Ser Arg Glu Asn Ala Phe
 610 615 620
 Arg Lys Gln Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile Ala Ser
 625 630 635 640
 Leu Phe Ser Gly Tyr Leu Ser
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<210> 437

<211> 231

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 437

Met Met Glu Val Phe Met Asn Phe Leu Asp Gln Leu Asp Leu Ile Ile
 5 10 15
 Gln Asn Lys His Met Leu Glu His Thr Phe Tyr Val Lys Trp Ser Lys
 20 25 30
 Gly Glu Leu Thr Lys Glu Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr
 35 40 45
 Leu His Ile Lys Ala Phe Pro Lys Tyr Leu Ser Ala Ile His Ser Arg
 50 55 60

Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp
 65 70 75 80
 Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val
 85 90 95
 Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser
 100 105 110
 Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly
 115 120 125
 Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln
 130 135 140
 Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe
 145 150 155 160
 Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu
 165 170 175
 Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu
 180 185 190
 Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr
 195 200 205
 Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys
 210 215 220
 Cys Ser Cys His Gln Ser Tyr
 225 230

<210> 438

<211> 533

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 438

Met Ser Asn Ser Phe Arg Asp Gln Glu Gln Gly Leu Gln Ala Val Phe
 5 10 15
 Arg Ala Ala Arg Val Ile Ser His Met Phe Ser Gln Thr Ile Gly Pro
 20 25 30
 Tyr Gly Phe Ser Thr Ile Val His Asn Val Gln Asp Thr Arg Thr Thr
 35 40 45
 Gln Asp Ser Gln Ser Met Leu Lys Asp Ile Leu Phe Pro Asp Val Phe
 50 55 60
 Glu Asn Ile Gly Met Lys Leu Ile Arg Asp Thr Ala Leu Arg Thr Arg
 65 70 75 80
 Met Arg Phe Gly Asp Gly Ala Lys Thr Thr Ala Leu Leu Ile Glu Ala

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85										90					95				
Leu	Leu	Ala	Glu	Gly	Met	Thr	Gly	Ile	Gln	Lys	Gly	Leu	Asp	Pro	His				
			100					105					110						
Glu	Ile	His	Arg	Gly	Met	Leu	Leu	Ala	Glu	Lys	Lys	Ile	Gln	Glu	Val				
		115					120					125							
Phe	Tyr	Arg	Glu	Thr	Phe	Pro	Leu	Ser	Asp	Leu	Glu	His	Thr	Val	Tyr				
	130					135					140								
Val	Ser	Ser	Ile	Ala	Arg	Arg	Cys	Asn	Ser	Glu	Ile	Ala	Ser	Val	Leu				
145					150					155					160				
Ser	Ser	Ala	Val	Gly	Tyr	Gly	Gly	Lys	Asn	Gly	Tyr	Tyr	Ile	Val	Glu				
				165					170					175					
Glu	His	Glu	Glu	His	Glu	Thr	Tyr	Trp	His	Ala	Glu	Glu	His	Ala	Val				
			180					185					190						
Trp	Asp	Phe	Gly	Tyr	Ala	Ser	Pro	Tyr	Phe	Ile	Thr	His	Ala	Glu	Thr				
	195						200					205							
Gly	Thr	Val	Glu	Tyr	Ser	Gln	Val	Tyr	Ile	Leu	Val	Ser	Glu	Gln	Pro				
	210					215					220								
Leu	His	Tyr	Ser	Asn	Pro	Ser	Phe	Leu	Thr	Phe	Leu	Gln	Ser	Val	Val				
225					230					235					240				
Gln	Ala	Gly	Lys	Thr	Pro	Leu	Val	Ile	Leu	Ala	Glu	Ala	Phe	Asp	Lys				
				245				250						255					
Glu	Leu	Leu	Ala	Met	Leu	Glu	Met	Asn	Gln	Ile	Glu	Arg	Val	Phe	Pro				
			260					265					270						
Val	Cys	Ala	Val	Lys	Val	Ser	Gly	Lys	His	Ala	Arg	Glu	Ser	Leu	Glu				
		275					280					285							
Asp	Ile	Ala	Val	Leu	Thr	Gly	Ala	Thr	Leu	Leu	Ser	Glu	Met	Asp	Phe				
	290					295					300								
Glu	Asp	Ser	Glu	Glu	Glu	Arg	Ile	Thr	Asn	Arg	Leu	Gly	Phe	Val	Ala				
305					310					315					320				
Gly	Ile	Cys	Val	Ser	Ser	Thr	Ser	Leu	Cys	Val	Pro	Arg	Glu	Thr	Asp				
			325						330					335					
Asn	Lys	Gln	Arg	Met	Ala	Glu	His	Cys	Ala	Phe	Leu	Gln	Asp	Lys	Leu				
			340					345					350						
Ser	Phe	Ser	Gln	Glu	Glu	Glu	Ala	Ser	Ala	Arg	Leu	Arg	Arg	Arg	Leu				
		355					360					365							
Ala	Arg	Leu	Ser	Ser	Gly	Glu	Val	Cys	Ile	His	Ile	Ala	Ala	Asp	Cys				
	370					375					380								
Ile	Pro	Gln	Glu	Glu	Ile	Gly	Tyr	Ile	Thr	Ser	Ser	Ile	Arg	Ala	Met				

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Arg	Gly	Ser	Leu	Ile	Ser	Ser	Thr	Glu	Val	Lys	Ile	Leu	Gly	Glu	Asn
		115					120					125			
Pro	Ser	Val	Ile	Lys	Ala	His	Ser	Ile	Ile	Leu	Ala	Thr	Gly	Ser	Glu
	130					135					140				
Pro	Arg	Ala	Phe	Pro	Gly	Ile	Pro	Phe	Ser	Ala	Glu	Ser	Pro	Arg	Ile
145					150					155					160
Leu	Cys	Ser	Thr	Gly	Val	Leu	Asn	Leu	Lys	Glu	Ile	Pro	Gln	Lys	Met
				165					170					175	
Ala	Ile	Ile	Gly	Gly	Gly	Val	Ile	Gly	Cys	Glu	Phe	Ala	Ser	Leu	Phe
			180					185					190		
His	Thr	Leu	Gly	Ser	Glu	Val	Ser	Val	Ile	Glu	Ala	Ser	Ser	Gln	Ile
		195					200					205			
Leu	Ala	Leu	Asn	Asn	Pro	Asp	Ile	Ser	Lys	Thr	Met	Phe	Asp	Lys	Phe
	210					215					220				
Thr	Arg	Gln	Gly	Leu	Arg	Phe	Val	Leu	Glu	Ala	Ser	Val	Ser	Asn	Ile
225					230					235					240
Glu	Asp	Ile	Gly	Asp	Arg	Val	Arg	Leu	Thr	Ile	Asn	Gly	Asn	Val	Glu
				245					250					255	
Glu	Tyr	Asp	Tyr	Val	Leu	Val	Ser	Ile	Gly	Arg	Arg	Leu	Asn	Thr	Glu
			260					265					270		
Asn	Ile	Gly	Leu	Asp	Lys	Ala	Gly	Val	Ile	Cys	Asp	Glu	Arg	Gly	Val
		275					280					285			
Ile	Pro	Thr	Asp	Ala	Thr	Met	Arg	Thr	Asn	Val	Pro	Asn	Ile	Tyr	Ala
	290					295					300				
Ile	Gly	Asp	Ile	Thr	Gly	Lys	Trp	Gln	Leu	Ala	His	Val	Ala	Ser	His
305					310					315					320
Gln	Gly	Ile	Ile	Ala	Ala	Arg	Asn	Ile	Ala	Gly	His	Lys	Glu	Glu	Ile
				325					330					335	
Asp	Tyr	Ser	Ala	Val	Pro	Ser	Val	Ile	Phe	Thr	Phe	Pro	Glu	Val	Ala
			340					345					350		
Ser	Val	Gly	Leu	Ser	Pro	Thr	Ala	Ala	Gln	Gln	Gln	Lys	Ile	Pro	Val
		355					360					365			
Lys	Val	Thr	Lys	Phe	Pro	Phe	Arg	Ala	Ile	Gly	Lys	Ala	Val	Ala	Met
	370					375					380				
Gly	Glu	Ala	Asp	Gly	Phe	Ala	Ala	Ile	Ile	Ser	His	Glu	Thr	Thr	Gln
385					390					395					400
Gln	Ile	Leu	Gly	Ala	Tyr	Val	Ile	Gly	Pro	His	Ala	Ser	Ser	Leu	Ile
				405					410					415	

Ser Glu Ile Thr Leu Ala Val Arg Asn Glu Leu Thr Leu Pro Cys Ile
420 425 430

Tyr Glu Thr Ile His Ala His Pro Thr Leu Ala Glu Val Trp Ala Glu
435 440 445

Ser Ala Leu Leu Ala Val Asp Thr Pro Leu His Met Pro Pro Ala Lys
450 455 460

Lys
465

<210> 440

<211> 122

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 440

Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
5 10 15

Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Pro Ala Leu Ser Lys Glu
20 25 30

Ile Ile Ala Arg Leu Gln Leu Asn Pro Glu Ala Arg Ala Ala Glu Leu
35 40 45

Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln Ser Asp Tyr
50 55 60

Val Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
65 70 75 80

Leu Ile Thr Ile His Ala Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
85 90 95

Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
100 105 110

Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
115 120

<210> 441

<211> 553

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 441

Met Arg Ile Gly Asp Pro Met Asn Lys Leu Ile Arg Arg Ala Val Thr
5 10 15

Ile Phe Ala Val Thr Ser Val Ala Ser Leu Phe Ala Ser Gly Val Leu
20 25 30

Glu Thr Ser Met Ala Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala

	35		40		45												
Asp	Thr	Lys	Ala	Lys	Asp	Asn	Thr	Ser	His	Lys	Ser	Lys	Lys	Ala	Arg		
	50					55					60						
Lys	Asn	His	Ser	Lys	Glu	Thr	Pro	Val	Asp	Arg	Lys	Glu	Val	Ala	Pro		
	65				70					75					80		
Val	His	Glu	Ser	Lys	Ala	Thr	Gly	Pro	Lys	Gln	Asp	Ser	Cys	Phe	Gly		
				85					90					95			
Arg	Met	Tyr	Thr	Val	Lys	Val	Asn	Asp	Asp	Arg	Asn	Val	Glu	Ile	Thr		
			100					105					110				
Gln	Ala	Val	Pro	Glu	Tyr	Ala	Thr	Val	Gly	Ser	Pro	Tyr	Pro	Ile	Glu		
		115					120					125					
Ile	Thr	Ala	Thr	Gly	Lys	Arg	Asp	Cys	Val	Asp	Val	Ile	Ile	Thr	Gln		
	130					135					140						
Gln	Leu	Pro	Cys	Glu	Ala	Glu	Phe	Val	Arg	Ser	Asp	Pro	Ala	Thr	Thr		
	145				150					155					160		
Pro	Thr	Ala	Asp	Gly	Lys	Leu	Val	Trp	Lys	Ile	Asp	Arg	Leu	Gly	Gln		
				165					170					175			
Gly	Glu	Lys	Ser	Lys	Ile	Thr	Val	Trp	Val	Lys	Pro	Leu	Lys	Glu	Gly		
			180					185					190				
Cys	Cys	Phe	Thr	Ala	Ala	Thr	Val	Cys	Ala	Cys	Pro	Glu	Ile	Arg	Ser		
		195					200					205					
Val	Thr	Lys	Cys	Gly	Gln	Pro	Ala	Ile	Cys	Val	Lys	Gln	Glu	Gly	Pro		
	210					215					220						
Glu	Asn	Ala	Cys	Leu	Arg	Cys	Pro	Val	Val	Tyr	Lys	Ile	Asn	Ile	Val		
	225				230					235					240		
Asn	Gln	Gly	Thr	Ala	Thr	Ala	Arg	Asn	Val	Val	Val	Glu	Asn	Pro	Val		
				245					250					255			
Pro	Asp	Gly	Tyr	Ala	His	Ser	Ser	Gly	Gln	Arg	Val	Leu	Thr	Phe	Thr		
			260					265					270				
Leu	Gly	Asp	Met	Gln	Pro	Gly	Glu	His	Arg	Thr	Ile	Thr	Val	Glu	Phe		
	275						280					285					
Cys	Pro	Leu	Lys	Arg	Gly	Arg	Ala	Thr	Asn	Ile	Ala	Thr	Val	Ser	Tyr		
	290					295					300						
Cys	Gly	Gly	His	Lys	Asn	Thr	Ala	Ser	Val	Thr	Thr	Val	Ile	Asn	Glu		
	305				310					315					320		
Pro	Cys	Val	Gln	Val	Ser	Ile	Ala	Gly	Ala	Asp	Trp	Ser	Tyr	Val	Cys		
				325					330					335			
Lys	Pro	Val	Glu	Tyr	Val	Ile	Ser	Val	Ser	Asn	Pro	Gly	Asp	Leu	Val		

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<210> 442
<211> 192
<212> PRT
<213> Chlamydia trachomatis serovar D
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<400> 442
Met Pro Glu Gly Glu Met Met His Lys Leu Gln Asp Val Ile Asp Arg
5 10 15
Lys Leu Leu Asp Ser Arg Arg Ile Phe Phe Ser Glu Pro Val Thr Glu
20 25 30
Lys Ser Ala Thr Glu Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Thr
35 40 45

Asn Pro Gly Gln Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser
 50 55 60
 Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Ile Ser Ser
 65 70 75 80
 Pro Leu Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val
 85 90 95
 Leu Ser Leu Cys Ala Val Pro Gly Arg Arg Phe Ala Thr Pro His Ala
 100 105 110
 Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Thr Ile Thr Gly Gln
 115 120 125
 Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala
 130 135 140
 Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Gly Gln Ser Arg Glu Val
 145 150 155 160
 Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Ser Ala Asn Glu Ala
 165 170 175
 Met Glu Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser Phe Asn Asp Leu
 180 185 190

 <210> 443
 <211> 275
 <212> PRT
 <213> Chlamydia trachomatis serovar D

 <400> 443
 Met Gly Phe Ser Ser Leu Leu Thr Thr Cys Arg Tyr Leu Leu Tyr Ser
 5 10 15
 Gly Ala Gly Asn Ser Phe Ile Leu Gly Glu Ser Met Pro Ser Leu Glu
 20 25 30
 Asp Val Leu Phe Leu Cys Gln Glu Glu Met Val Asp Gly Phe Leu Cys
 35 40 45
 Val Glu Ser Ser Glu Ile Ala Asp Ala Lys Leu Thr Val Phe Asn Ser
 50 55 60
 Asp Gly Ser Ile Ala Ser Met Cys Gly Asn Gly Leu Arg Cys Ala Met
 65 70 75 80
 Ala His Val Ala Gln Cys Phe Gly Leu Glu Asp Val Ser Ile Glu Thr
 85 90 95
 Glu Arg Gly Val Tyr Gln Gly Lys Phe Phe Ser Met Asn Arg Val Leu
 100 105 110
 Val Asp Met Thr Leu Pro Asp Trp Lys Lys Ala Glu Arg Lys Leu Thr
 115 120 125

		100					105					110				
Ile	Tyr	Ala 115	Arg	Glu	Lys	Leu	Thr 120	Ile	Ser	Glu	Ser	Gln 125	Asp	Ser	Leu	
Ser	Asn 130	Gln	Ser	Ile	Glu	Leu 135	His	Asp	Asn	Ser	Ile 140	Phe	Phe	Gly	Glu	
Gly 145	Glu	Val	Ile	Phe	Asp 150	His	Arg	Val	Ala	Leu 155	Lys	Asn	Gly	Gly	Ala 160	
Ile	Tyr	Gly	Glu	Lys 165	Glu	Val	Val	Phe	Glu 170	Asn	Ile	Lys	Ser	Leu 175	Leu	
Val	Glu	Val	Asn 180	Ile	Ala	Val	Glu	Lys 185	Gly	Gly	Ser	Val	Tyr 190	Ala	Lys	
Glu	Arg	Val 195	Ser	Leu	Glu	Asn	Val 200	Thr	Glu	Ala	Thr	Phe 205	Ser	Ser	Asn	
Gly	Gly 210	Glu	Gln	Gly	Gly	Gly 215	Gly	Ile	Tyr	Ser	Glu 220	Gln	Asp	Met	Leu	
Ile 225	Ser	Asp	Cys	Asn	Asn 230	Val	His	Phe	Gln	Gly 235	Asn	Ala	Ala	Gly	Ala 240	
Thr	Ala	Val	Lys	Gln 245	Cys	Leu	Asp	Glu	Glu 250	Met	Ile	Val	Leu	Leu 255	Ala	
Glu	Cys	Val	Asp 260	Ser	Leu	Ser	Glu	Asp 265	Thr	Leu	Asp	Ser	Thr 270	Pro	Glu	
Thr	Glu	Gln 275	Thr	Glu	Ser	Asn	Gly 280	Asn	Gln	Asp	Gly	Ser 285	Ser	Glu	Thr	
Glu	Asp 290	Thr	Gln	Val	Ser	Glu 295	Ser	Pro	Glu	Ser	Thr 300	Pro	Ser	Pro	Asp	
Asp 305	Val	Leu	Gly	Lys	Gly 310	Gly	Gly	Ile	Tyr	Thr 315	Glu	Lys	Ser	Leu	Thr 320	
Ile	Thr	Gly	Ile	Thr 325	Gly	Thr	Ile	Asp	Phe 330	Val	Ser	Asn	Ile	Ala 335	Thr	
Asp	Ser	Gly	Ala 340	Gly	Val	Phe	Thr	Lys 345	Glu	Asn	Leu	Ser	Cys 350	Thr	Asn	
Thr	Asn	Ser 355	Leu	Gln	Phe	Leu	Lys 360	Asn	Ser	Ala	Gly	Gln 365	His	Gly	Gly	
Gly	Ala 370	Tyr	Val	Thr	Gln	Thr	Met 375	Ser	Val	Thr	Asn 380	Thr	Thr	Ser	Glu	
Ser 385	Ile	Thr	Thr	Pro	Pro 390	Leu	Ile	Gly	Glu	Val 395	Ile	Phe	Ser	Glu	Asn 400	
Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys	Leu	Ser	Leu	

405							410						415			
Ser	Asn	Leu	Lys 420	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala	Lys 430	Glu	Ser	
Gly	Gly	Ala 435	Ile	Phe	Thr	Asp	Leu 440	Ala	Ser	Ile	Pro	Ile 445	Thr	Asp	Thr	
Pro	Glu 450	Ser	Ser	Thr	Pro	Ser 455	Ser	Ser	Ser	Pro	Ala 460	Ser	Thr	Pro	Glu	
Val 465	Val	Ala	Ser	Ala	Lys 470	Ile	Asn	Arg	Phe	Phe 475	Ala	Ser	Thr	Ala	Lys 480	
Pro	Ala	Ala	Pro	Ser 485	Leu	Thr	Glu	Ala	Glu 490	Ser	Asp	Gln	Thr	Asp 495	Gln	
Thr	Glu	Thr	Ser 500	Asp	Thr	Asn	Ser	Asp 505	Ile	Asp	Val	Ser	Ile 510	Glu	Asn	
Ile	Leu	Asn 515	Val	Ala	Ile	Asn	Gln 520	Asn	Thr	Ser	Ala	Lys 525	Lys	Gly	Gly	
Ala	Ile 530	Tyr	Gly	Lys	Lys	Ala 535	Lys	Leu	Ser	Arg	Ile 540	Asn	Asn	Leu	Glu	
Leu 545	Ser	Gly	Asn	Ser	Ser 550	Gln	Asp	Val	Gly	Gly 555	Gly	Leu	Cys	Leu	Thr 560	
Glu	Ser	Val	Glu	Phe 565	Asp	Ala	Ile	Gly	Ser 570	Leu	Leu	Ser	His	Tyr 575	Asn	
Ser	Ala	Ala	Lys 580	Glu	Gly	Gly	Ala 585	Ile	His	Ser	Lys	Thr	Val 590	Thr	Leu	
Ser	Asn	Leu 595	Lys	Ser	Thr	Phe	Thr 600	Phe	Ala	Asp	Asn	Thr 605	Val	Lys	Ala	
Ile 610	Val	Glu	Ser	Thr	Pro	Glu 615	Ala	Pro	Glu	Glu 620	Ile	Pro	Pro	Val	Glu	
Gly 625	Glu	Glu	Ser	Thr	Ala 630	Thr	Glu	Asp	Pro	Asn 635	Ser	Asn	Thr	Glu	Gly 640	
Ser	Ser	Ala	Asn	Thr 645	Asn	Leu	Glu	Gly	Ser 650	Gln	Gly	Asp	Thr	Ala 655	Asp	
Thr	Gly	Thr	Gly 660	Asp	Val	Asn	Asn	Glu 665	Ser	Gln	Asp	Thr	Ser 670	Asp	Thr	
Gly	Asn	Ala 675	Glu	Ser	Glu	Glu	Gln 680	Leu	Gln	Asp	Ser	Thr 685	Gln	Ser	Asn	
Glu	Glu 690	Asn	Thr	Leu	Pro	Asn 695	Ser	Asn	Ile	Asp	Gln 700	Ser	Asn	Glu	Asn	
Thr	Asp	Glu	Ser	Ser	Asp	Ser	His	Thr	Glu	Glu	Ile	Thr	Asp	Glu	Ser	

705					710					715					720
Val	Ser	Ser	Ser	Ser	Glu	Ser	Gly	Ser	Ser	Thr	Pro	Gln	Asp	Gly	Gly
				725					730					735	
Ala	Ala	Ser	Ser	Gly	Ala	Pro	Ser	Gly	Asp	Gln	Ser	Ile	Ser	Ala	Asn
			740					745					750		
Ala	Cys	Leu	Ala	Lys	Ser	Tyr	Ala	Ala	Ser	Thr	Asp	Ser	Ser	Pro	Val
		755					760					765			
Ser	Asn	Ser	Ser	Gly	Ser	Glu	Glu	Pro	Val	Thr	Ser	Ser	Ser	Asp	Ser
	770					775					780				
Asp	Val	Thr	Ala	Ser	Ser	Asp	Asn	Pro	Asp	Ser	Ser	Ser	Ser	Gly	Asp
785					790					795					800
Ser	Ala	Gly	Asp	Ser	Glu	Glu	Pro	Thr	Glu	Pro	Glu	Ala	Gly	Ser	Thr
				805					810					815	
Thr	Glu	Thr	Leu	Thr	Leu	Ile	Gly	Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Thr
			820					825					830		
Val	Lys	Ile	Glu	Asn	Phe	Ser	Gly	Gln	Gly	Ile	Phe	Ser	Gly	Asn	Lys
		835					840					845			
Ala	Ile	Asp	Asn	Thr	Thr	Glu	Gly	Ser	Ser	Ser	Lys	Ser	Asp	Val	Leu
	850					855					860				
Gly	Gly	Ala	Val	Tyr	Ala	Lys	Thr	Leu	Phe	Asn	Leu	Asp	Ser	Gly	Ser
865					870					875					880
Ser	Arg	Arg	Thr	Val	Thr	Phe	Ser	Gly	Asn	Thr	Val	Ser	Ser	Gln	Ser
				885					890					895	
Thr	Thr	Gly	Gln	Val	Ala	Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr
			900					905					910		
Ile	Ala	Thr	Pro	Val	Val	Phe	Ser	Lys	Asn	Ser	Ala	Thr	Asn	Asn	Ala
		915					920					925			
Asn	Asn	Thr	Thr	Asp	Thr	Gln	Arg	Lys	Asp	Thr	Phe	Gly	Gly	Ala	Ile
	930					935					940				
Gly	Ala	Thr	Ser	Ala	Val	Ser	Leu	Ser	Gly	Gly	Ala	His	Phe	Leu	Glu
945					950				955						960
Asn	Val	Ala	Asp	Leu	Gly	Ser	Ala	Ile	Gly	Leu	Val	Pro	Gly	Thr	Gln
				965					970					975	
Asn	Thr	Glu	Thr	Val	Lys	Leu	Glu	Ser	Gly	Ser	Tyr	Tyr	Phe	Glu	Lys
			980					985					990		
Asn	Lys	Ala	Leu	Lys	Arg	Ala	Thr	Ile	Tyr	Ala	Pro	Val	Val	Ser	Ile
		995					1000					1005			
Lys	Ala	Tyr	Thr	Ala	Thr	Phe	Asn	Gln	Asn	Arg	Ser	Leu	Glu	Glu	Gly

1010				1015				1020							
Ser	Ala	Ile	Tyr	Phe	Thr	Lys	Glu	Ala	Ser	Ile	Glu	Ser	Leu	Gly	Ser
1025					1030					1035					1040
Val	Leu	Phe	Thr	Gly	Asn	Leu	Val	Thr	Leu	Thr	Leu	Ser	Thr	Thr	Thr
				1045					1050					1055	
Glu	Gly	Thr	Pro	Ala	Thr	Thr	Ser	Gly	Asp	Val	Thr	Lys	Tyr	Gly	Ala
			1060					1065					1070		
Ala	Ile	Phe	Gly	Gln	Ile	Ala	Ser	Ser	Asn	Gly	Ser	Gln	Thr	Asp	Asn
		1075					1080					1085			
Leu	Pro	Leu	Lys	Leu	Ile	Ala	Ser	Gly	Gly	Asn	Ile	Cys	Phe	Arg	Asn
	1090					1095					1100				
Asn	Glu	Tyr	Arg	Pro	Thr	Ser	Ser	Asp	Thr	Gly	Thr	Ser	Thr	Phe	Cys
1105					1110					1115					1120
Ser	Ile	Ala	Gly	Asp	Val	Lys	Leu	Thr	Met	Gln	Ala	Ala	Lys	Gly	Lys
			1125						1130					1135	
Thr	Ile	Ser	Phe	Phe	Asp	Ala	Ile	Arg	Thr	Ser	Thr	Lys	Lys	Thr	Gly
			1140					1145					1150		
Thr	Gln	Ala	Thr	Ala	Tyr	Asp	Thr	Leu	Asp	Ile	Asn	Lys	Ser	Glu	Asp
		1155					1160					1165			
Ser	Glu	Thr	Val	Asn	Ser	Ala	Phe	Thr	Gly	Thr	Ile	Leu	Phe	Ser	Ser
	1170					1175					1180				
Glu	Leu	His	Glu	Asn	Lys	Ser	Tyr	Ile	Pro	Gln	Asn	Val	Val	Leu	His
1185					1190					1195					1200
Ser	Gly	Ser	Leu	Val	Leu	Lys	Pro	Asn	Thr	Glu	Leu	His	Val	Ile	Ser
			1205						1210					1215	
Phe	Glu	Gln	Lys	Glu	Gly	Ser	Ser	Leu	Val	Met	Thr	Pro	Gly	Ser	Val
			1220					1225					1230		
Leu	Ser	Asn	Gln	Thr	Val	Ala	Asp	Gly	Ala	Leu	Val	Ile	Asn	Asn	Met
		1235					1240					1245			
Thr	Ile	Asp	Leu	Ser	Ser	Val	Glu	Lys	Asn	Gly	Ile	Ala	Glu	Gly	Asn
	1250					1255					1260				
Ile	Phe	Thr	Pro	Pro	Glu	Leu	Arg	Ile	Ile	Asp	Thr	Thr	Thr	Gly	Gly
1265					1270					1275					1280
Ser	Gly	Gly	Thr	Pro	Ser	Thr	Asp	Ser	Glu	Ser	Asn	Gln	Asn	Ser	Asp
			1285						1290					1295	
Asp	Thr	Glu	Glu	Gln	Asn	Asn	Asn	Asp	Ala	Ser	Asn	Gln	Gly	Glu	Ser
			1300					1305					1310		
Ala	Asn	Gly	Ser	Ser	Ser	Pro	Ala	Val	Ala	Ala	Ala	His	Thr	Ser	Arg

1315	1320	1325
Thr Arg Asn Phe Ala Ala Ala Ala Thr Ala Thr Pro Thr Thr Thr Pro		
1330	1335	1340
Thr Ala Thr Thr Thr Thr Ser Asn Gln Val Ile Leu Gly Gly Glu Ile		
1345	1350	1355 1360
Lys Leu Ile Asp Pro Asn Gly Thr Phe Phe Gln Asn Pro Ala Leu Arg		
1365	1370	1375
Ser Asp Gln Gln Ile Ser Leu Leu Val Leu Pro Thr Asp Ser Ser Lys		
1380	1385	1390
Met Gln Ala Gln Lys Ile Val Leu Thr Gly Asp Ile Ala Pro Gln Lys		
1395	1400	1405
Gly Tyr Thr Gly Thr Leu Thr Leu Asp Pro Asp Gln Leu Gln Asn Gly		
1410	1415	1420
Thr Ile Ser Val Leu Trp Lys Phe Asp Ser Tyr Arg Gln Trp Ala Tyr		
1425	1430	1435 1440
Val Pro Arg Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln		
1445	1450	1455
Met Leu Met Val Thr Val Lys Gln Gly Leu Leu Asn Asp Lys Met Asn		
1460	1465	1470
Leu Ala Arg Phe Glu Glu Val Ser Tyr Asn Asn Leu Trp Ile Ser Gly		
1475	1480	1485
Leu Gly Thr Met Leu Ser Gln Val Gly Thr Pro Thr Ser Glu Glu Phe		
1490	1495	1500
Thr Tyr Tyr Ser Arg Gly Ala Ser Val Ala Leu Asp Ala Lys Pro Ala		
1505	1510	1515 1520
His Asp Val Ile Val Gly Ala Ala Phe Ser Lys Met Ile Gly Lys Thr		
1525	1530	1535
Lys Ser Leu Lys Arg Glu Asn Asn Tyr Thr His Lys Gly Ser Glu Tyr		
1540	1545	1550
Ser Tyr Gln Ala Ser Val Tyr Gly Gly Lys Pro Phe His Phe Val Ile		
1555	1560	1565
Asn Lys Lys Thr Glu Lys Ser Leu Pro Leu Leu Leu Gln Gly Val Ile		
1570	1575	1580
Ser Tyr Gly Tyr Ile Lys His Asp Thr Val Thr His Tyr Pro Thr Ile		
1585	1590	1595 1600
Arg Glu Arg Asn Lys Gly Glu Trp Glu Asp Leu Gly Trp Leu Thr Ala		
1605	1610	1615
Leu Arg Val Ser Ser Val Leu Arg Thr Pro Ala Gln Gly Asp Thr Lys		

Ser	Gly	Val	Leu	Ser	Phe	Met	Thr	Arg	Ser	Gly	Thr	Glu	Gly	Ser	Leu
		115					120					125			
Thr	Leu	Ser	Glu	Ile	Lys	Ile	Thr	Gly	Glu	Gly	Gly	Ala	Ile	Phe	Ser
	130					135					140				
Gln	Gly	Glu	Leu	Leu	Phe	Thr	Asp	Leu	Thr	Gly	Leu	Thr	Ile	Gln	Asn
145					150					155					160
Asn	Leu	Ser	Gln	Leu	Ser	Gly	Gly	Ala	Ile	Phe	Gly	Glu	Ser	Thr	Ile
				165					170					175	
Ser	Leu	Ser	Gly	Ile	Thr	Lys	Ala	Thr	Phe	Ser	Ser	Asn	Ser	Ala	Glu
			180					185					190		
Val	Pro	Ala	Pro	Val	Lys	Lys	Pro	Thr	Glu	Pro	Lys	Ala	Gln	Thr	Ala
		195					200					205			
Ser	Glu	Thr	Ser	Gly	Ser	Ser	Ser	Ser	Ser	Gly	Asn	Asp	Ser	Val	Ser
	210					215					220				
Ser	Pro	Ser	Ser	Ser	Arg	Ala	Glu	Pro	Ala	Ala	Ala	Asn	Leu	Gln	Ser
225					230					235					240
His	Phe	Ile	Cys	Ala	Thr	Ala	Thr	Pro	Ala	Ala	Gln	Thr	Asp	Thr	Glu
				245					250					255	
Thr	Ser	Thr	Pro	Ser	His	Lys	Pro	Gly	Ser	Gly	Gly	Ala	Ile	Tyr	Ala
			260					265					270		
Lys	Gly	Asp	Leu	Thr	Ile	Ala	Asp	Ser	Gln	Glu	Val	Leu	Phe	Ser	Ile
		275					280					285			
Asn	Lys	Ala	Thr	Lys	Asp	Gly	Gly	Ala	Ile	Phe	Ala	Glu	Lys	Asp	Val
	290					295					300				
Ser	Phe	Glu	Asn	Ile	Thr	Ser	Leu	Lys	Val	Gln	Thr	Asn	Gly	Ala	Glu
305					310					315					320
Glu	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Gly	Asp	Leu	Ser	Ile	Gln	Ser
				325					330					335	
Ser	Lys	Gln	Ser	Leu	Phe	Asn	Ser	Asn	Tyr	Ser	Lys	Gln	Gly	Gly	Gly
			340					345					350		
Ala	Leu	Tyr	Val	Glu	Gly	Asp	Ile	Asn	Phe	Gln	Asp	Leu	Glu	Glu	Ile
		355					360					365			
Arg	Ile	Lys	Tyr	Asn	Lys	Ala	Gly	Thr	Phe	Glu	Thr	Lys	Lys	Ile	Thr
	370					375					380				
Leu	Pro	Lys	Ala	Gln	Ala	Ser	Ala	Gly	Asn	Ala	Asp	Ala	Trp	Ala	Ser
385					390					395					400
Ser	Ser	Pro	Gln	Ser	Gly	Ser	Gly	Ala	Thr	Thr	Val	Ser	Asn	Ser	Gly
				405					410					415	

Asp	Ser	Ser	Ser	Gly	Ser	Asp	Ser	Asp	Thr	Ser	Glu	Thr	Val	Pro	Ala
			420					425					430		
Thr	Ala	Lys	Gly	Gly	Gly	Leu	Tyr	Thr	Asp	Lys	Asn	Leu	Ser	Ile	Thr
		435					440					445			
Asn	Ile	Thr	Gly	Ile	Ile	Glu	Ile	Ala	Asn	Asn	Lys	Ala	Thr	Asp	Val
		450				455					460				
Gly	Gly	Gly	Ala	Tyr	Val	Lys	Gly	Thr	Leu	Thr	Cys	Glu	Asn	Ser	His
		465			470					475					480
Arg	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ser	Asp	Lys	Gln	Gly	Gly	Gly	Ile
				485					490					495	
Tyr	Gly	Glu	Asp	Asn	Ile	Thr	Leu	Ser	Asn	Leu	Thr	Gly	Lys	Thr	Leu
			500					505					510		
Phe	Gln	Glu	Asn	Thr	Ala	Lys	Glu	Glu	Gly	Gly	Gly	Leu	Phe	Ile	Lys
		515					520					525			
Gly	Thr	Asp	Lys	Ala	Leu	Thr	Met	Thr	Gly	Leu	Asp	Ser	Phe	Cys	Leu
		530				535					540				
Ile	Asn	Asn	Thr	Ser	Glu	Lys	His	Gly	Gly	Gly	Ala	Phe	Val	Thr	Lys
		545			550					555					560
Glu	Ile	Ser	Gln	Thr	Tyr	Thr	Ser	Asp	Val	Glu	Thr	Ile	Pro	Gly	Ile
				565					570					575	
Thr	Pro	Val	His	Gly	Glu	Thr	Val	Ile	Thr	Gly	Asn	Lys	Ser	Thr	Gly
			580					585					590		
Gly	Asn	Gly	Gly	Gly	Val	Cys	Thr	Lys	Arg	Leu	Ala	Leu	Ser	Asn	Leu
		595					600					605			
Gln	Ser	Ile	Ser	Ile	Ser	Gly	Asn	Ser	Ala	Ala	Glu	Asn	Gly	Gly	Gly
		610				615					620				
Ala	His	Thr	Cys	Pro	Asp	Ser	Phe	Pro	Thr	Ala	Asp	Thr	Ala	Glu	Gln
					630					635					640
Pro	Ala	Ala	Ala	Ser	Ala	Ala	Thr	Ser	Thr	Pro	Glu	Ser	Ala	Pro	Val
				645					650					655	
Val	Ser	Thr	Ala	Leu	Ser	Thr	Pro	Ser	Ser	Ser	Thr	Val	Ser	Ser	Leu
			660					665					670		
Thr	Leu	Leu	Ala	Ala	Ser	Ser	Gln	Ala	Ser	Pro	Ala	Thr	Ser	Asn	Lys
		675					680					685			
Glu	Thr	Gln	Asp	Pro	Asn	Ala	Asp	Thr	Asp	Leu	Leu	Ile	Asp	Tyr	Val
		690				695					700				
Val	Asp	Thr	Thr	Ile	Ser	Lys	Asn	Thr	Ala	Lys	Lys	Gly	Gly	Gly	Ile
					710					715					720

Tyr Ala Lys Lys Ala Lys Met Ser Arg Ile Asp Gln Leu Asn Ile Ser
 725 730 735
 Glu Asn Ser Ala Thr Glu Ile Gly Gly Gly Ile Cys Cys Lys Glu Ser
 740 745 750
 Leu Glu Leu Asp Ala Leu Val Ser Leu Ser Val Thr Glu Asn Leu Val
 755 760 765
 Gly Lys Glu Gly Gly Gly Leu His Ala Lys Thr Val Asn Ile Ser Asn
 770 775 780
 Leu Lys Ser Gly Phe Ser Phe Ser Asn Asn Lys Ala Asn Ser Ser Ser
 785 790 795 800
 Thr Gly Val Ala Thr Thr Ala Ser Ala Pro Ala Ala Ala Ala Ala Ser
 805 810 815
 Leu Gln Ala Ala Ala Ala Ala Val Pro Ser Ser Pro Ala Thr Pro Thr
 820 825 830
 Tyr Ser Gly Val Val Gly Gly Ala Ile Tyr Gly Glu Lys Val Thr Phe
 835 840 845
 Ser Gln Cys Ser Gly Thr Cys Gln Phe Ser Gly Asn Gln Ala Ile Asp
 850 855 860
 Asn Asn Pro Ser Gln Ser Ser Leu Asn Val Gln Gly Gly Ala Ile Tyr
 865 870 875 880
 Ala Lys Thr Ser Leu Ser Ile Gly Ser Ser Asp Ala Gly Thr Ser Tyr
 885 890 895
 Ile Phe Ser Gly Asn Ser Val Ser Thr Gly Lys Ser Gln Thr Thr Gly
 900 905 910
 Gln Ile Ala Gly Gly Ala Ile Tyr Ser Pro Thr Val Thr Leu Asn Cys
 915 920 925
 Pro Ala Thr Phe Ser Asn Asn Thr Ala Ser Met Ala Thr Pro Lys Thr
 930 935 940
 Ser Ser Glu Asp Gly Ser Ser Gly Asn Ser Ile Lys Asp Thr Ile Gly
 945 950 955 960
 Gly Ala Ile Ala Gly Thr Ala Ile Thr Leu Ser Gly Val Ser Arg Phe
 965 970 975
 Ser Gly Asn Thr Ala Asp Leu Gly Ala Ala Ile Gly Thr Leu Ala Asn
 980 985 990
 Ala Asn Thr Pro Ser Ala Thr Ser Gly Ser Gln Asn Ser Ile Thr Glu
 995 1000 1005
 Lys Ile Thr Leu Glu Asn Gly Ser Phe Ile Phe Glu Arg Asn Gln Ala
 1010 1015 1020

Asn Lys Arg Gly Ala Ile Tyr Ser Pro Ser Val Ser Ile Lys Gly Asn
 1025 1030 1035 1040
 Asn Ile Thr Phe Asn Gln Asn Thr Ser Thr His Asp Gly Ser Ala Ile
 1045 1050 1055
 Tyr Phe Thr Lys Asp Ala Thr Ile Glu Ser Leu Gly Ser Val Leu Phe
 1060 1065 1070
 Thr Gly Asn Asn Val Thr Ala Thr Gln Ala Ser Ser Ala Thr Ser Gly
 1075 1080 1085
 Gln Asn Thr Asn Thr Ala Asn Tyr Gly Ala Ala Ile Phe Gly Asp Pro
 1090 1095 1100
 Gly Thr Thr Gln Ser Ser Gln Thr Asp Ala Ile Leu Thr Leu Leu Ala
 1105 1110 1115 1120
 Ser Ser Gly Asn Ile Thr Phe Ser Asn Asn Ser Leu Gln Asn Asn Gln
 1125 1130 1135
 Gly Asp Thr Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val Lys
 1140 1145 1150
 Leu Ser Leu Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp Cys
 1155 1160 1165
 Val His Thr Ser Thr Lys Lys Ile Gly Ser Thr Gln Asn Val Tyr Glu
 1170 1175 1180
 Thr Leu Asp Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly Thr
 1185 1190 1195 1200
 Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln
 1205 1210 1215
 Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr Glu
 1220 1225 1230
 Leu His Val Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile Met
 1235 1240 1245
 Lys Pro Gly Ala Val Leu Ser Asn Gln Asn Ile Ala Asn Gly Ala Leu
 1250 1255 1260
 Val Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser Met Gly Thr Pro Gln
 1265 1270 1275 1280
 Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr Thr
 1285 1290 1295
 Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr Asn
 1300 1305 1310
 Pro Lys Arg Ile Ser Ala Ala Ala Pro Ser Gly Ser Ala Ala Thr Thr
 1315 1320 1325

Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr Leu
 1330 1335 1340
 Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser Asp
 1345 1350 1355 1360
 Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val Gln
 1365 1370 1375
 Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly Tyr
 1380 1385 1390
 Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu Gln
 1395 1400 1405
 Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro Arg
 1410 1415 1420
 Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Asn Ser Met
 1425 1430 1435 1440
 Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met Leu Asn Asn Ala Arg
 1445 1450 1455
 Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly Thr
 1460 1465 1470
 Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr Tyr
 1475 1480 1485
 Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp Phe
 1490 1495 1500
 Ile Leu Gly Ala Ala Phe Ser Lys Met Val Gly Lys Thr Lys Ala Ile
 1505 1510 1515 1520
 Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr Gln
 1525 1530 1535
 Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys Gln
 1540 1545 1550
 His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr Gly
 1555 1560 1565
 His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro Ser Ile His Glu Arg
 1570 1575 1580
 Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu Ala Asp Leu Arg Ile
 1585 1590 1595 1600
 Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser Ser Lys Arg Ile Thr
 1605 1610 1615
 Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr
 1620 1625 1630

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Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp Cys Ala Tyr Arg Asn
1635 1640 1645

Leu Ser Leu Pro Val Gly Cys Ala Val Glu Gly Ala Ile Met Asn Cys
1650 1655 1660

Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala Tyr Met Pro Ser Ile
1665 1670 1675 1680

Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val Leu Ser Ser Asn Glu
1685 1690 1695

Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg Thr Ser Ala Arg Ala
1700 1705 1710

Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe Trp Thr Leu Tyr Gly
1715 1720 1725

Asn Tyr Thr Ile Asp Val Gly Met Tyr Thr Leu Ser Gln Met Thr Ser
1730 1735 1740

Cys Gly Ala Arg Met Ile Phe
1745 1750

<210> 446

<211> 660

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 446

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Thr Thr Asn Ser Cys Val Ser Val Met Glu Gly Gly Gln Pro Lys Val
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Ile Ala Ser Ser Glu Gly Thr Arg Thr Thr Pro Ser Ile Val Ala Phe
35 40 45

Lys Gly Gly Glu Thr Leu Val Gly Ile Pro Ala Lys Arg Gln Ala Val
50 55 60

Thr Asn Pro Glu Lys Thr Leu Ala Ser Thr Lys Arg Phe Ile Gly Arg
65 70 75 80

Lys Phe Ser Glu Val Glu Ser Glu Ile Lys Thr Val Pro Tyr Lys Val
85 90 95

Ala Pro Asn Ser Lys Gly Asp Ala Val Phe Asp Val Glu Gln Lys Leu
100 105 110

Tyr Thr Pro Glu Glu Ile Gly Ala Gln Ile Leu Met Lys Met Lys Glu
115 120 125

Thr Ala Glu Ala Tyr Leu Gly Glu Thr Val Thr Glu Ala Val Ile Thr
130 135 140

Val Pro Ala Tyr Phe Asn Asp Ser Gln Arg Ala Ser Thr Lys Asp Ala
 145 150 155 160
 Gly Arg Ile Ala Gly Leu Asp Val Lys Arg Ile Ile Pro Glu Pro Thr
 165 170 175
 Ala Ala Ala Leu Ala Tyr Gly Ile Asp Lys Glu Gly Asp Lys Lys Ile
 180 185 190
 Ala Val Phe Asp Leu Gly Gly Gly Thr Phe Asp Ile Ser Ile Leu Glu
 195 200 205
 Ile Gly Asp Gly Val Phe Glu Val Leu Ser Thr Asn Gly Asp Thr His
 210 215 220
 Leu Gly Gly Asp Asp Phe Asp Gly Val Ile Ile Asn Trp Met Leu Asp
 225 230 235 240
 Glu Phe Lys Lys Gln Glu Gly Ile Asp Leu Ser Lys Asp Asn Met Ala
 245 250 255
 Leu Gln Arg Leu Lys Asp Ala Ala Glu Lys Ala Lys Ile Glu Leu Ser
 260 265 270
 Gly Val Ser Ser Thr Glu Ile Asn Gln Pro Phe Ile Thr Ile Asp Ala
 275 280 285
 Asn Gly Pro Lys His Leu Ala Leu Thr Leu Thr Arg Ala Gln Phe Glu
 290 295 300
 His Leu Ala Ser Ser Leu Ile Glu Arg Thr Lys Gln Pro Cys Ala Gln
 305 310 315 320
 Ala Leu Lys Asp Ala Lys Leu Ser Ala Ser Asp Ile Asp Asp Val Leu
 325 330 335
 Leu Val Gly Gly Met Ser Arg Met Pro Ala Val Gln Ala Val Val Lys
 340 345 350
 Glu Ile Phe Gly Lys Glu Pro Asn Lys Gly Val Asn Pro Asp Glu Val
 355 360 365
 Val Ala Ile Gly Ala Ala Ile Gln Gly Gly Val Leu Gly Gly Glu Val
 370 375 380
 Lys Asp Val Leu Leu Leu Asp Val Ile Pro Leu Ser Leu Gly Ile Glu
 385 390 395 400
 Thr Leu Gly Gly Val Met Thr Pro Leu Val Glu Arg Asn Thr Thr Ile
 405 410 415
 Pro Thr Gln Lys Lys Gln Ile Phe Ser Thr Ala Ala Asp Asn Gln Pro
 420 425 430
 Ala Val Thr Ile Val Val Leu Gln Gly Glu Arg Pro Met Ala Lys Asp
 435 440 445

Asn Lys Glu Ile Gly Arg Phe Asp Leu Thr Asp Ile Pro Pro Ala Pro
 450 455 460
 Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp Ile Asp Ala Asn Gly
 465 470 475 480
 Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser Gly Arg Glu Gln Lys
 485 490 495
 Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu Asp Glu Ile Gln Gln
 500 505 510
 Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu Asp Lys Gln Arg Lys
 515 520 525
 Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly Met Ile Phe Arg Ala
 530 535 540
 Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile Pro Ala Glu Leu Val
 545 550 555 560
 Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg Gln Ala Ile Lys Glu
 565 570 575
 Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser Asp Glu Leu Ser Thr
 580 585 590
 His Met Gln Lys Ile Gly Glu Ala Met Gln Ala Gln Ser Ala Ser Ala
 595 600 605
 Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly Pro Asn Ile Asn Ser
 610 615 620
 Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg Pro Pro Ala Gly Gly
 625 630 635 640
 Ser Ala Ser Ser Thr Asp Asn Ile Glu Asp Ala Asp Val Glu Ile Val
 645 650 655
 Asp Lys Pro Glu
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<210> 447

<211> 326

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 447

Met Val Ser Gln Thr Val Ser Val Ala Val Thr Gly Gly Thr Gly Gln
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Ile Ala Tyr Ser Phe Leu Phe Ser Leu Ala His Gly Asp Val Phe Gly
 20 25 30

Leu Asp Cys Gly Ile Asp Leu Arg Ile Tyr Asp Ile Pro Gly Thr Glu

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35					40					45						
Arg	Ala	Leu	Ser	Gly	Val	Arg	Met	Glu	Leu	Asp	Asp	Gly	Ala	Phe	Pro	
50					55					60						
Leu	Leu	Gln	Arg	Val	Gln	Val	Thr	Thr	Ser	Leu	His	Asp	Ala	Phe	Asp	
65					70					75					80	
Gly	Ile	Asp	Ala	Ala	Phe	Leu	Ile	Gly	Ser	Val	Pro	Arg	Gly	Pro	Gly	
					85					90					95	
Met	Glu	Arg	Arg	Asp	Leu	Leu	Lys	Lys	Asn	Gly	Glu	Ile	Phe	Ala	Thr	
					100					105					110	
Gln	Gly	Lys	Ala	Leu	Asn	Thr	Thr	Ala	Lys	Arg	Asp	Ala	Lys	Ile	Phe	
					115					120					125	
Val	Val	Gly	Asn	Pro	Val	Asn	Thr	Asn	Cys	Trp	Ile	Ala	Met	Asn	His	
					130					135					140	
Ala	Pro	Arg	Leu	Leu	Arg	Lys	Asn	Phe	His	Ala	Met	Leu	Arg	Leu	Asp	
145					150					155					160	
Gln	Asn	Arg	Met	His	Ser	Met	Leu	Ser	His	Arg	Ala	Glu	Val	Pro	Leu	
					165					170					175	
Ser	Ala	Val	Ser	Gln	Val	Val	Val	Trp	Gly	Asn	His	Ser	Ala	Lys	Gln	
					180					185					190	
Val	Pro	Asp	Phe	Thr	Gln	Ala	Leu	Ile	Asn	Asp	Arg	Pro	Ile	Ala	Glu	
					195					200					205	
Thr	Ile	Ala	Asp	Arg	Asp	Trp	Leu	Glu	Asn	Ile	Met	Val	Pro	Ser	Val	
210					215					220						
Gln	Ser	Arg	Gly	Ser	Ala	Val	Ile	Glu	Ala	Arg	Gly	Lys	Ser	Ser	Ala	
225					230					235					240	
Ala	Ser	Ala	Ala	Arg	Ala	Leu	Ala	Glu	Ala	Ala	Arg	Ser	Ile	Tyr	Gln	
					245					250					255	
Pro	Lys	Glu	Gly	Glu	Trp	Phe	Ser	Ser	Gly	Val	Cys	Ser	Asp	His	Asn	
					260					265					270	
Pro	Tyr	Gly	Leu	Pro	Glu	Asp	Leu	Ile	Phe	Gly	Phe	Pro	Cys	Arg	Met	
					275					280					285	
Leu	Ala	Thr	Gly	Glu	Tyr	Glu	Val	Ile	Pro	Arg	Leu	Pro	Trp	Asp	Ala	
290					295					300						
Phe	Ile	Arg	Gly	Lys	Met	Gln	Ile	Ser	Leu	Asp	Glu	Ile	Leu	Gln	Glu	
305					310					315					320	
Lys	Ala	Ser	Val	Ser	Leu											
						325										

<213> Chlamydia trachomatis serovar D

Asp Thr Arg Glu Leu Ile Ala Leu
225 230

<213> Chlamydia trachomatis serovar D

Met	Phe	Lys	Cys	Pro	Glu	Arg	Val	Ser	Ile	Lys	Lys	Lys	Glu	Asp	Ile	
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Leu	Asp	Leu	Pro	Asn	Leu	Val	Glu	Val	Gln	Ile	Lys	Ser	Tyr	Lys	Gln	
				20					25					30		
Phe	Leu	Gln	Ile	Gly	Lys	Leu	Ala	Glu	Glu	Arg	Glu	Asn	Ile	Gly	Leu	
				35					40					45		
Glu	Glu	Val	Phe	Arg	Glu	Ile	Phe	Pro	Ile	Lys	Ser	Tyr	Asn	Glu	Ala	
				50					55					60		
Thr	Ile	Leu	Glu	Tyr	Leu	Ser	Tyr	Asn	Leu	Gly	Val	Pro	Lys	Tyr	Ser	
				65					70					75		
Pro	Glu	Glu	Cys	Ile	Arg	Arg	Gly	Ile	Thr	Tyr	Ser	Val	Thr	Leu	Lys	
				85					90					95		
Val	Arg	Phe	Arg	Leu	Thr	Asp	Glu	Thr	Gly	Ile	Lys	Glu	Glu	Glu	Val	
				100					105					110		
Tyr	Met	Gly	Thr	Ile	Pro	Ile	Met	Thr	Asp	Lys	Gly	Thr	Phe	Ile	Ile	
				115					120					125		
Asn	Gly	Ala	Glu	Arg	Val	Val	Val	Ser	Gln	Val	His	Arg	Ser	Pro	Gly	
				130					135					140		
Ile	Asn	Phe	Glu	Gln	Glu	Lys	His	Ser	Lys	Gly	Asn	Val	Leu	Phe	Ser	
				145					150					155		
Phe	Arg	Ile	Ile	Pro	Tyr	Arg	Gly	Ser	Trp	Leu	Glu	Ala	Val	Phe	Asp	
				165					170					175		
Ile	Asn	Asp	Leu	Ile	Tyr	Ile	His	Ile	Asp	Arg	Lys	Lys	Arg	Arg	Arg	
				180					185					190		
Lys	Ile	Leu	Ala	Met	Thr	Phe	Ile	Arg	Ala	Leu	Gly	Tyr	Ser	Thr	Asp	
				195					200					205		
Ala	Asp	Ile	Ile	Glu	Glu	Phe	Phe	Ser	Val	Glu	Glu	Arg	Ser	Leu	Arg	
				210					215					220		
Leu	Glu	Lys	Asp	Phe	Val	Ala	Leu	Val	Gly	Lys	Val	Leu	Ala	Asp	Asn	
				225					230					235		
Val	Val	Asp	Ala	Asp	Ser	Ser	Leu	Val	Tyr	Gly	Lys	Ala	Gly	Glu	Lys	
				245					250					255		
Leu	Ser	Thr	Ala	Met	Leu	Lys	Arg	Ile	Leu	Asp	Ala	Gly	Val	Gln	Ser	
				260					265					270		
Leu	Lys	Ile	Ala	Val	Gly	Ala	Asp	Glu	Asn	His	Pro	Ile	Ile	Lys	Met	
				275					280					285		
Leu	Ala	Lys	Asp	Pro	Thr	Asp	Ser	Tyr	Glu	Ala	Ala	Leu	Lys	Asp	Phe	
				290					295					300		

Tyr Arg Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Val Asn Ala Arg
 305 310 315 320
 Ser Thr Ile Met Arg Leu Phe Phe Asp Ala Lys Arg Tyr Asn Leu Gly
 325 330 335
 Arg Val Gly Arg Tyr Lys Leu Asn Lys Lys Leu Gly Phe Pro Leu Asp
 340 345 350
 Asp Glu Thr Leu Ser Gln Val Thr Leu Arg Lys Glu Asp Val Ile Gly
 355 360 365
 Ala Leu Lys Tyr Leu Ile Arg Leu Arg Met Gly Asp Glu Lys Thr Ser
 370 375 380
 Ile Asp Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly
 385 390 395 400
 Glu Leu Ile Gln Asn His Cys Arg Ser Gly Leu Ala Arg Met Glu Lys
 405 410 415
 Ile Val Arg Glu Arg Met Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu
 420 425 430
 Thr Pro Gly Lys Ile Ile Ser Ala Lys Gly Leu Val Ser Val Leu Lys
 435 440 445
 Asp Phe Phe Ser Arg Ser Gln Leu Ser Gln Phe Met Asp Gln Thr Asn
 450 455 460
 Pro Val Ala Glu Leu Thr His Lys Arg Arg Leu Ser Ala Leu Gly Pro
 465 470 475 480
 Gly Gly Leu Asn Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val His
 485 490 495
 Ala Ser His Tyr Gly Arg Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro
 500 505 510
 Asn Ile Gly Leu Ile Thr Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu
 515 520 525
 Phe Gly Phe Ile Glu Thr Pro Tyr Arg Val Val Arg Asp Gly Ile Val
 530 535 540
 Thr Asp Glu Ile Glu Tyr Met Thr Ala Asp Val Glu Glu Glu Cys Val
 545 550 555 560
 Ile Ala Gln Ala Ser Ala Glu Leu Asp Glu Tyr Asp Met Phe Lys Thr
 565 570 575
 Pro Val Cys Trp Ala Arg Tyr Lys Gly Glu Ala Phe Glu Ala Asp Thr
 580 585 590
 Ser Thr Val Thr His Met Asp Val Ser Pro Lys Gln Leu Val Ser Val
 595 600 605

Val Thr Gly Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala
 610 615 620
 Leu Met Gly Ser Asn Met Gln Arg Gln Ala Val Pro Leu Leu Lys Thr
 625 630 635 640
 Glu Ala Ala Ile Val Gly Thr Gly Leu Glu Gly Arg Ala Ala Lys Asp
 645 650 655
 Ser Gly Ala Ile Ile Val Ala Gln Glu Asp Gly Val Val Glu Tyr Val
 660 665 670
 Asp Ser Tyr Glu Ile Val Val Ala Lys Lys Asn Asn Pro Thr Leu Lys
 675 680 685
 Asp Arg Tyr Gln Leu Lys Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys
 690 695 700
 Ile Asn Gln Thr Pro Leu Cys Ser Val Gly Asp Val Val Thr His Gly
 705 710 715 720
 Asp Val Leu Ala Asp Gly Pro Ala Thr Asp Lys Gly Glu Leu Ala Leu
 725 730 735
 Gly Lys Asn Val Leu Val Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe
 740 745 750
 Glu Asp Ala Ile Ile Ile Ser Glu Arg Leu Ile Lys Gln Asp Ala Tyr
 755 760 765
 Thr Ser Ile Tyr Ile Glu Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys
 770 775 780
 Leu Gly Lys Glu Glu Ile Thr Arg Asp Ile Pro Asn Val Ser Glu Glu
 785 790 795 800
 Val Leu Ala Asn Leu Gly Glu Asp Gly Val Val Arg Ile Gly Ala Glu
 805 810 815
 Val Lys Pro Gly Asp Ile Leu Val Gly Lys Ile Thr Pro Lys Ser Glu
 820 825 830
 Thr Glu Leu Ala Pro Glu Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu
 835 840 845
 Lys Ala Ala Asp Val Lys Asp Ala Ser Leu Thr Val Pro Pro Gly Thr
 850 855 860
 Glu Gly Val Val Met Asp Val Lys Val Phe Ser Arg Lys Asp Arg Leu
 865 870 875 880
 Ser Lys Ser Asp Asp Glu Leu Val Glu Glu Ala Val His Leu Lys Asp
 885 890 895
 Leu Gln Lys Glu Tyr Lys Ser Gln Leu Ala Gln Leu Lys Val Glu His
 900 905 910

Val Lys Gly Glu Asn Leu Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn
 1220 1225 1230

Val Leu Ile Lys Glu Met Gln Gly Leu Gly Leu Asp Val Arg Pro Met
 1235 1240 1245

Val Val Asp Ala
 1250

<210> 450

<211> 298

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 450

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 5 10 15

Gly Asp Asp Asn Gly Tyr Gly Trp Gly Ile Ala Lys Met Leu Ala Glu
 20 25 30

Ala Gly Ala Thr Ile Leu Val Gly Thr Trp Val Pro Ile Tyr Lys Ile
 35 40 45

Phe Ser Gln Ser Leu Glu Leu Gly Lys Phe Asn Ala Ser Arg Glu Leu
 50 55 60

Ser Asn Gly Glu Leu Leu Thr Phe Ala Lys Ile Tyr Pro Met Asp Ala
 65 70 75 80

Ser Phe Asp Thr Pro Glu Asp Ile Pro Gln Glu Ile Leu Glu Asn Lys
 85 90 95

Arg Tyr Lys Asp Leu Ser Gly Tyr Thr Val Ser Glu Val Val Glu Gln
 100 105 110

Val Lys Lys His Phe Gly His Ile Asp Ile Leu Val His Ser Leu Ala
 115 120 125

Asn Ser Pro Glu Ile Ala Lys Pro Leu Leu Asp Thr Ser Arg Lys Gly
 130 135 140

Tyr Leu Ala Ala Leu Ser Thr Ser Ser Tyr Ser Phe Ile Ser Leu Leu
 145 150 155 160

Ser His Phe Gly Pro Ile Met Asn Ala Gly Ala Ser Thr Ile Ser Leu
 165 170 175

Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly Gly Gly Met
 180 185 190

Asn Ala Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Val Leu Ala Trp
 195 200 205

Glu Ala Gly Arg Arg Trp Gly Val Arg Val Asn Thr Ile Ser Ala Gly

0904133-042301

210	215	220
Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile Glu Arg Met 225 230 235 240		
Val Asp Tyr Tyr Gln Asp Trp Ala Pro Leu Pro Ser Pro Met Glu Ala 245 250 255		
Glu Gln Val Gly Ala Ala Ala Ala Phe Leu Val Ser Pro Leu Ala Ser 260 265 270		
Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala Asn Val Met 275 280 285		
Gly Ile Gly Pro Glu Met Phe Pro Lys Asp 290 295		

<210> 451
 <211> 298
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 451	
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His Gln Ser His Leu Leu His Asp Arg Val Val Lys Ala Leu His Gln 20 25 30	
Tyr Tyr Asp Ser Gly Trp Gln Leu Phe Phe Leu Thr Gly Arg Tyr Phe 35 40 45	
Ser Tyr Ala Tyr Pro Leu Phe Gln Asn Phe Ser Val Pro Phe Leu Leu 50 55 60	
Gly Ser Gln Asn Gly Ser Ser Val Trp Ser Ser Thr Asp Lys Glu Phe 65 70 75 80	
Ile Tyr Phe Arg Ser Leu Ser Arg Asp Phe Leu Tyr Val Leu Glu Lys 85 90 95	
Tyr Phe Glu Asp Leu Asp Leu Ile Ala Cys Ile Glu Ser Gly Ala Ser 100 105 110	
Asn Arg Asp Val Tyr Phe Arg Lys Gly Leu Gly Lys Thr Ser Gln Glu 115 120 125	
Leu Lys Ala Ile Leu Asp Ala Val Tyr Phe Pro Thr Pro Glu Ala Ala 130 135 140	
Arg Leu Leu Val Asp Val Gln Gly His Leu Ser Glu Glu Phe Ser Tyr 145 150 155 160	
Glu Asp Phe Ala Ile Ala Lys Phe Phe Gly Glu Arg Glu Glu Val Lys 165 170 175	

T094133-04301

Lys Ile Met Asp Arg Phe Ile Gln Ser Pro Glu Val Ser Ser Gln Val
180 185 190

Thr Met Asn Tyr Met Arg Trp Pro Phe Asp Phe Lys Tyr Ala Val Leu
195 200 205

Leu Leu Thr Leu Lys Asp Val Ser Lys Gly Phe Ala Val Asp Gln Val
210 215 220

Val Gln Thr Phe Tyr Lys Glu Asn Lys Pro Phe Ile Met Ala Ser Gly
225 230 235 240

Asp Asp Ala Asn Asp Ile Asp Leu Leu Ser Arg Gly Asp Phe Lys Ile
245 250 255

Val Ile Gln Thr Ala Pro Glu Glu Met His Gly Leu Ala Asp Phe Leu
260 265 270

Ala Pro Pro Ala Lys Asp Phe Gly Ile Leu Ser Ala Trp Glu Ala Gly
275 280 285

Glu Leu Arg Tyr Lys Gln Leu Val Asn Pro
290 295

<210> 452

<211> 153

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 452

Met Leu Arg Leu Phe Gln His Ile Leu Cys Phe Leu Glu Glu Asp Pro
5 10 15

Ser Phe Val Asp Val Pro Gln Glu Leu Ser Phe Val Asn Glu Ala Phe
20 25 30

Ser Gly Ser Met Arg Trp Glu Val Gly Arg Met Leu Gly Ser Leu Leu
35 40 45

Leu Leu Leu Gly Ile Phe Gly Gly Gly Cys Leu Leu Phe Arg Arg Phe
50 55 60

Leu Arg Ser Arg Gly His Leu Pro Ser Gly Asn Ser Ser Ile Lys Ile
65 70 75 80

Leu Asp Gln Arg Val Leu Ala Ser Lys Thr Ser Ile Tyr Val Ile Lys
85 90 95

Val Ala Asn Lys Thr Leu Val Val Ala Glu Arg Gly Glu Arg Val Thr
100 105 110

Leu Leu Ser Glu Phe Pro Pro Asn Thr Asp Leu Asn Glu Leu Ile Gln
115 120 125

Lys Asp Gln Lys Lys Pro Ser Thr Pro Arg Gly Glu Met Leu Ser Gly
130 135 140

<210> 453
<211> 569
<212> PRT
<213> Chlamydia trachomatis serovar D

Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile

036413-0430

				245					250					255			
Arg	His	Pro	Ser	Glu	Met	Val	Glu	Leu	Asn	Gln	Glu	Leu	Glu	Val	Ile		
			260					265					270				
Ile	Leu	Ser	Val	Asp	Lys	Glu	Lys	Gly	Arg	Val	Ala	Leu	Gly	Leu	Lys		
		275					280					285					
Gln	Lys	Glu	His	Asn	Pro	Trp	Glu	Asp	Ile	Glu	Lys	Lys	Tyr	Pro	Pro		
	290					295					300						
Gly	Lys	Arg	Val	Arg	Gly	Lys	Ile	Val	Lys	Leu	Leu	Pro	Tyr	Gly	Ala		
305					310					315					320		
Phe	Ile	Glu	Ile	Glu	Glu	Gly	Ile	Glu	Gly	Leu	Ile	His	Val	Ser	Glu		
				325					330					335			
Met	Ser	Trp	Val	Lys	Asn	Ile	Val	Asp	Pro	Asn	Glu	Val	Val	Asn	Lys		
			340					345					350				
Gly	Asp	Glu	Val	Glu	Val	Val	Val	Leu	Ser	Ile	Gln	Lys	Asp	Glu	Gly		
		355					360					365					
Lys	Ile	Ser	Leu	Gly	Leu	Lys	Gln	Thr	Lys	His	Asn	Pro	Trp	Asp	Asn		
	370					375					380						
Ile	Glu	Glu	Lys	Tyr	Pro	Ile	Gly	Leu	Arg	Val	Thr	Ala	Glu	Ile	Lys		
385					390					395					400		
Asn	Leu	Thr	Asn	Tyr	Gly	Ala	Phe	Val	Glu	Leu	Glu	Pro	Gly	Ile	Glu		
				405					410					415			
Gly	Leu	Ile	His	Ile	Ser	Asp	Met	Ser	Trp	Ile	Lys	Lys	Val	Ser	His		
			420					425					430				
Pro	Ser	Glu	Leu	Phe	Lys	Lys	Gly	Asn	Thr	Val	Glu	Ala	Val	Ile	Leu		
		435					440					445					
Ser	Val	Asp	Lys	Glu	Ser	Lys	Lys	Ile	Thr	Leu	Gly	Val	Lys	Gln	Leu		
	450					455					460						
Thr	Pro	Asn	Pro	Trp	Asp	Glu	Ile	Glu	Val	Met	Phe	Pro	Val	Gly	Ser		
465					470					475					480		
Asp	Ile	Ser	Gly	Val	Val	Thr	Lys	Ile	Thr	Ala	Phe	Gly	Ala	Phe	Val		
				485					490					495			
Glu	Leu	Gln	Asn	Gly	Ile	Glu	Gly	Leu	Ile	His	Val	Ser	Glu	Leu	Ser		
			500					505					510				
Glu	Lys	Pro	Phe	Ala	Lys	Ile	Glu	Asp	Val	Leu	Ser	Ile	Gly	Asp	Lys		
		515					520					525					
Val	Ser	Ala	Lys	Val	Ile	Lys	Leu	Asp	Pro	Asp	His	Lys	Lys	Val	Ser		
	530					535					540						
Leu	Ser	Ile	Lys	Glu	Phe	Leu	Val	His	Gly	Gly	Asp	Ala	Gly	His	Asp		

T02240 "CE" 042201

545						550						555						560
Ala	Glu	Glu	Glu	Ser	Ser	Asp	Arg	Asp										
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<210> 454																		
<211> 666																		
<212> PRT																		
<213> Chlamydia trachomatis serovar D																		
<400> 454																		
Met	Glu	Ser	Leu	Ser	Val	Arg	Ser	Thr	Ile	Pro	Leu	Pro	Leu	Gly	Ala			
				5						10								
Lys	Lys	Leu	Ser	Ala	Asp	Arg	Tyr	Arg	Phe	Ser	Leu	Phe	Ser	Ser	Gln			
			20					25										
Ala	Gln	Gln	Val	Thr	Leu	Val	Leu	Leu	Asp	Pro	Leu	Ser	Glu	Ile	His			
		35					40											
Glu	Ile	Pro	Leu	Ser	Ser	Thr	Asp	His	Arg	Thr	Gly	Ala	Ile	Trp	His			
		50					55					60						
Ile	Glu	Ile	Ala	Gly	Ile	Ser	Ser	Glu	Trp	Ser	Tyr	Ala	Tyr	Lys	Leu			
		65			70													
Arg	Gly	Thr	Asp	Leu	Ser	Ser	Gln	Lys	Phe	Ala	Thr	Asp	Ser	Tyr	Ile			
				85					90									
Ala	Asp	Pro	Tyr	Ser	Lys	Asn	Ile	Tyr	Ser	Pro	Gln	Leu	Phe	Gly	Ser			
			100					105										
Pro	Lys	Gln	Glu	Lys	Asp	Tyr	Ala	Phe	Ser	Tyr	Leu	Lys	His	Glu	Asp			
		115					120					125						
Phe	Asp	Trp	Glu	Gly	Asp	Thr	Pro	Leu	His	Leu	Pro	Lys	Glu	Asn	Tyr			
		130					135					140						
Phe	Ile	Tyr	Glu	Met	His	Val	Arg	Ser	Phe	Thr	Arg	Asp	Pro	Ser	Ser			
		145			150					155								
Gln	Val	Ser	His	Pro	Gly	Thr	Phe	Leu	Gly	Ile	Ile	Glu	Lys	Ile	Asp			
				165					170									
His	Leu	Lys	Gln	Leu	Gly	Val	His	Ala	Val	Glu	Leu	Leu	Pro	Ile	Phe			
			180					185					190					
Glu	Phe	Asp	Glu	Thr	Val	His	Pro	Phe	Lys	Asn	Gln	Asp	Phe	Pro	His			
		195					200					205						
Leu	Cys	Asn	Tyr	Trp	Gly	Tyr	Ser	Ser	Val	Asn	Phe	Phe	Cys	Pro	Ser			
		210					215					220						
Arg	Arg	Tyr	Thr	Tyr	Gly	Ala	Asp	Pro	Cys	Ala	Pro	Ala	Arg	Glu	Phe			
		225			230					235								

Lys	Thr	Leu	Val	Lys 245	Ala	Leu	His	Arg	Ala 250	Gly	Ile	Glu	Val	Ile 255	Leu
Asp	Val	Val	Phe 260	Asn	His	Thr	Gly	Phe 265	Glu	Gly	Thr	Ser	Cys 270	Pro	Leu
Pro	Trp	Ile 275	Asp	Leu	Glu	Ser	Tyr 280	Tyr	Met	Val	Asn	Asp 285	His	Gly	Asp
Leu	Met 290	Asn	Phe	Ser	Gly	Cys 295	Gly	Asn	Thr	Val	Asn 300	Thr	Asn	Thr	Pro
Thr 305	Thr	Leu	Lys	Trp	Ile 310	Leu	Asp	Ala	Leu	Arg 315	Tyr	Trp	Val	Gln	Glu 320
Met	His	Val	Asp	Gly 325	Phe	Arg	Phe	Asp	Leu 330	Ala	Ser	Val	Phe	Ser 335	Arg
Asp	Pro	Gln	Gly 340	Val	Pro	Leu	Pro	Leu 345	Thr	Pro	Ile	Leu	Gln 350	Ala	Ile
Ser	Ser	Asp 355	Ser	Ile	Leu	Ser	Glu 360	Thr	Lys	Leu	Ile	Ala 365	Glu	Pro	Trp
Asp	Ala 370	Gly	Gly	Leu	Tyr	Gln 375	Leu	Gly	His	Phe	Pro 380	Ser	Ile	Ser	Thr
Arg 385	Trp	Ser	Glu	Trp	Asn 390	Gly	Cys	Tyr	Arg	Asp 395	His	Val	Lys	Ala	Phe 400
Leu	Asn	Gly	Asp	Ala 405	His	Gln	Val	Ser	Ser 410	Phe	Ala	Ser	Arg	Ile 415	Ser
Gly	Ser	His	Asp 420	Ile	Tyr	Pro	Asn	Gly 425	Lys	Pro	Thr	Asn	Ser 430	Ile	Asn
Tyr	Ile	Cys 435	Ser	His	Asp	Gly	Phe 440	Thr	Leu	Tyr	Asp	Thr 445	Val	Ala	Tyr
Asn	Asp 450	Lys	His	Asn	Glu	Glu 455	Asn	Gly	Glu	Tyr	Asn 460	Arg	Asp	Gly	Thr
Ser 465	Ala	Asn	Tyr	Ser	Tyr 470	Asn	Phe	Gly	Cys	Glu 475	Gly	Glu	Thr	Thr	Asp 480
Pro	Thr	Ile	Cys	Ala 485	Leu	Arg	Glu	Arg	Gln 490	Met	Lys	Asn	Phe	Phe 495	Leu
Ala	Leu	Phe	Leu 500	Ser	Gln	Gly	Ile	Pro 505	Met	Ile	Gln	Ser	Gly 510	Asp	Glu
Tyr	Gly	His 515	Thr	Ala	Tyr	Gly	Asn 520	Asn	Asn	His	Trp	Cys 525	Leu	Asp	Thr
Lys	Ile 530	Asn	Tyr	Phe	Leu	Trp 535	Asp	Arg	Leu	Ala	Glu 540	Arg	Lys	Glu	Leu

Phe Ser Phe Leu Cys Gln Val Ile Ala Leu Arg Lys Ala Tyr Thr Glu
 545 550 555 560
 Leu Phe Asn Thr Ser Phe Leu Ser Glu Asp Thr Ile Thr Trp Leu Asn
 565 570 575
 Thr Lys Gly Ser Pro Arg Glu Trp Gly Ala Asp His Tyr Leu Ala Phe
 580 585 590
 Glu Leu Lys His Leu Asn Tyr Ser Leu Phe Val Ala Phe Tyr Ser Gly
 595 600 605
 Asn Glu Arg Ile Glu Ile Ser Leu Pro Lys Pro Arg Lys Glu His Leu
 610 615 620
 Ala Tyr Glu Lys Ile Val Asp Ser Thr Thr Gly Phe Phe Ser Gln Ile
 625 630 635 640
 Leu Ser Pro Lys Leu Ser Leu Glu Pro Tyr Ser Ser Leu Val Ala Ile
 645 650 655
 Ser Arg Arg Lys Thr Ser Leu Glu Ser Arg
 660 665

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 <211> 882
 <212> DNA
 <213> Chlamydia pneumoniae

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 acctttgcaa aacttcatgg ggtgcccgtc tttgagggtt ctatgttttc tgctgcccac 180
 gctcctcatc ttaaaacttc aatttttagat tttaaactag ggtctccagg agctgcatta 240
 actatagact tatgttcatt tcttctctgat ctcaaagcag cgcttatgtt aggaatgtgt 300
 gggggcttac gctctcatta tcagggttga gattactttg tccccgtagc tagcatagct 360
 ggagagggta cttcagacgc ctatttccct cctgaagttc cggctcttgc aaattttgtt 420
 gtacagaaag caacaactga agtttttagaa gataagaagg caaactacca tattggcatt 480
 acccacacga ccaacattcg cttttgggaa ttttaacaaa aatttagaaa aaaactgtac 540
 gaaaccaaag ctcaatccgc tgaaatggag tgtgcgacac tttttgctgc cggataccgt 600
 agaaacctgc ccattggagc gttattattg atttcagatc ttcccttaag gaaggaggga 660
 atcaaaacga agtccagtgg gaacttcatc ttttaatactt atacggaaga ccacatctta 720
 acaggacaag aagtcataga gaaccttgaa aaagtcatgc taaaacgagc agcttctgac 780
 cataagaagg atcaacagta tcgaggatta cctcatatgg aagttggaga agccgatgac 840
 actatggcta gcggctctga aacttccgac agtgactatt ga 882

<210> 456
 <211> 1185
 <212> DNA
 <213> Chlamydia pneumoniae

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 ttggcctctt tccgtgacta tagttcaatt gacaatactc cagaagaaaa ggctcgtgga 180
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ttgctagctc	gccagggttg	agttccttat	atcggtgttt	tcttgaataa	agtagatatg	420
atctctcaag	aagatgctga	acttattgac	cttggtgaga	tggaacttag	tgagcttctt	480
gaagaaaaag	gctacaaagg	atgccctatt	atccgtgggt	ctgctttgaa	agctcttgaa	540
ggtgatgcaa	attatatcga	aaaagttcga	gaacttatgc	aagctgtgga	tgacaacatc	600
cctacaccag	aaagagaaat	tgataagcct	ttcttaaatg	ctatcgaaga	cgtattctca	660
atctctggtc	gtggtactgt	ggttacagga	agaatcgagc	gtggaatcgt	taaagtttct	720
gataaagttc	agctcgtggg	attaggagag	actaaagaaa	caatcggtac	tggagtcgaa	780
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cctcatacga	aatttaagtc	agctgtttac	gttcttcaga	aagaagaagg	cggacgtcat	960
aagcctttct	tcagcggata	cagacctcag	ttcttcttcc	gtactacaga	cgtgacagga	1020
gtcgtaaactc	ttcctgaagg	aactgaaatg	gtaatgcctg	gagataacgt	tgagcttgat	1080
gttgagctca	ttggaacagt	tgctcttgaa	gaaggaatga	gatttgcaat	tcgtgaagggt	1140
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<210> 457

<211> 1656

<212> DNA

<213> Chlamydia pneumoniae

<400> 457

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ggagacgatg	tccttttatat	ttgtggttcc	gatgaatttg	gcatagcgat	caccttaaat	180
gcggatcggtg	aggggttggg	gtatcaagag	tacgtggata	tgtaccataa	gttacataaa	240
gatacttttg	agaagttagg	gtttgctttg	gattttcttt	ctaggacgac	gaaccctttt	300
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<211> 294

<212> DNA

<213> Chlamydia pneumoniae

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<210> 459
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 <212> DNA
 <213> Chlamydia pneumoniae

<400> 459
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 <212> DNA
 <213> Chlamydia pneumoniae

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 <212> DNA
 <213> Chlamydia pneumoniae

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<210> 463

<211> 1236

<212> DNA

<213> Chlamydia pneumoniae

<400> 463

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<211> 1215

<212> DNA

<213> Chlamydia pneumoniae

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<212> DNA
<213> Chlamydia pneumoniae
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<213> Chlamydia pneumoniae
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<210> 467

<211> 1089

<212> DNA

<213> Chlamydia pneumoniae

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<210> 468

<211> 1308

<212> DNA

<213> Chlamydia pneumoniae

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<210> 469
 <211> 1749
 <212> DNA
 <213> *Chlamydia pneumoniae*

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<210> 470
 <211> 516
 <212> DNA
 <213> *Chlamydia pneumoniae*

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 gaaactgaag aattggaagc tatgaaacag cagtttgtaa aaaatgctga gaaaatagaa 180
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 gattctgcct ctgaagagtt gcgaaagaaa ttcgaagatc tttcaggaga gtacaatgcg 300
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 gctattctta acgaatcttt caaaaaacaa aactag 516

<210> 471
 <211> 1083
 <212> DNA

<213> Chlamydia pneumoniae

<400> 471

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<210> 472

<211> 1200

<212> DNA

<213> Chlamydia pneumoniae

<400> 472

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gctgagaaaa	aatctgaatc	tacagaagag	aagcctgaca	cagatccttg	tgataagtat	300
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tcagcagaca	aacgtcagca	attaggagct	atgattgcta	atgctttaga	tgctgtaaata	1140
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<210> 473

<211> 675

<212> DNA

<213> Chlamydia pneumoniae

<400> 473

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<210> 474

<211> 741

<212> DNA

<213> Chlamydia pneumoniae

<400> 474

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<210> 475

<211> 1062

<212> DNA

<213> Chlamydia pneumoniae

<400> 475

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 <211> 3135
 <212> DNA
 <213> Chlamydia pneumoniae

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<212> DNA
<213> Chlamydia pneumoniae
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<210> 480

<211> 444

<212> DNA

<213> Chlamydia pneumoniae

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<210> 481

<211> 1581

<212> DNA

<213> Chlamydia pneumoniae

<400> 481

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<210> 482

<211> 1908

<212> DNA

<213> Chlamydia pneumoniae

<400> 482

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<213> Chlamydia pneumoniae

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gttctccatg	gtcaagtttc	ctatggaaga	aaccaccata	atatgacgac	aaagcttgcg	3720
aacaacacac	aagggaaatc	agactgggac	agccatagct	tcgctgttga	agtcggtggt	3780
tctcttcctg	tagatctaaa	ctacagatac	cttaccagct	actctcccta	tgtgaaactc	3840
caagttgtga	gtgtaaatca	aaaaggattc	caagagggtt	ctgctgatcc	acgtatcttt	3900
gacgctagcc	atctggtcaa	cgtgtctatc	cctatgggac	tcaccttcaa	acacgaatca	3960
gcaaagcccc	ccagtgtctt	gcttcttact	ttaggttacg	ctgtagatgc	ttaccgggat	4020
cacctcact	gctgacctc	cttaacaaat	ggcacctcgt	ggtctacggt	tgctacaaac	4080
ttatcacgac	aagctttctt	tgctgaggct	tctggacatc	tgaagttact	tcattggtctt	4140
gactgcttcg	cttctggaag	ttgtgaactg	cgcagctcct	caagaagcta	taatgcaaac	4200
tgtggaactc	gttattcttt	ctaa				4224

<210> 487

<211> 804

<212> DNA

<213> Chlamydia pneumoniae

<400> 487

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cgtcttggtc	aaatgaccac	agttcttaaa	aaagacgagg	ttattatagg	cacagatata	120
actccaacag	taacaaaatt	tagtggcgat	aagggcaattg	taattactac	agactcaacc	180
ataacaccat	ctagcactac	tttttctttg	gatatggaag	ctgtaatcaa	agaagtaaca	240
gataaaatct	taactcaaat	tgaagatgag	ttagtcaaag	acattataaa	aaacataact	300
caaagtctaa	tagaagaagt	aattaagaaa	atacacattg	atccttcttt	ctcatattct	360
agagatttta	aagatgttaa	tataactaat	aaaattcagt	gcaatggtct	atttacaata	420
gaaaatatag	ggaattttaga	cggaggaaca	gaaatagctt	cgtcttcagt	aacacctgat	480
aatgctaata	gtatgttctt	aatttgtgcg	gatattatag	ccacacgcat	ggaaggaaca	540
gtggccttgg	cgttagttaa	agaaggagat	ttatctcctt	gctctattag	ttatggatac	600
tccgctggat	atccgaatat	aatttcacta	agagcaaccg	tcggaaacaa	aacaactgct	660
ccagttaaat	tctctttgag	agcaggaggg	atggatagtg	gtgttggtgtg	ggtaaattgct	720
atgccaaatg	gagaaaaaat	tttaggagtt	gacgcagttt	cgaagattac	tatcttagaa	780
gtaaaaccac	aaacaaatgg	ttaa				804

<210> 488

<211> 306

<212> DNA

<213> Chlamydia pneumoniae

<400> 488

atgaataaca	gacaaaacac	taatgacttt	atcagaattg	tgaaggatgt	tgaaggaggc	60
tttccagaac	tagatatcaa	agtaaaaaata	gataaagaaa	aagttacttt	tttgacttct	120
ccaacagagc	tttatcacia	aagtatatct	gtcactactca	atttactaaa	cagcattgaa	180
tcatctctag	accttttccc	agactctcca	gtagttgaag	aattagaaaa	aaataatctt	240
aagctcaaaa	aagctctgat	catgctaatt	ctatcaagaa	aagacatggt	ctcaaaaaca	300
gaataa						306

<210> 489

<211> 806
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 489
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 aatgttggtt gtaatttagc ccaatatagc aacaaaaagg ttttgcttgt ggatttagat 120
 ccacaagcaa accttactac aggtcttggg gtacaatctt gttatgaatc taatttgaac 180
 gacattttta gaagttcagg aaacgtaagg gatatcattc aagatacgaa gatagaaaac 240
 ttacacatag taccttctag tattctcata gaggagtffc gagaatttaa tagaaatagt 300
 gtactggata caagtcattt gcgttcattt ttacaactta ttgaatccaa ttatgatctg 360
 tgtatttttag aactccacc aagtcctggg acgctcaccg aagaagcctt tattgcatca 420
 gatcatttga ttgtttgtct tactcctgaa ccattttcca tattaggatt acagaaaatc 480
 aaagagtttt gttcagtgtt acctaaaaag aaagacttat cagtgttagg aatagttttt 540
 tctttttggg acggaaggaa ttcaacaaat tcaacctact tgaacattat agaattctatc 600
 tacgaaggga aagtgttatt tagtaaaagta cgaagagaca taacattaag cagatctctt 660
 ttaaaagaaa catccatagc taacgcatac cctaattcta gagcaagtca tgacatactg 720
 cgtctaacaa aggagataga agataaaacta ttcaataaag aaatgtctgc ccaggaagtg 780
 ttgtgagtaa gttagtcaaa gaagca 806

<210> 490
 <211> 293
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 490
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 Arg Tyr Ser Gly Ser Ser Val Lys Gln Phe Cys Pro Tyr Leu Leu Leu
 20 25 30
 Thr Asn Phe Ser Tyr Tyr Ile Gln Thr Phe Ala Lys Leu His Gly Val
 35 40 45
 Pro Val Phe Glu Gly Ser Met Phe Ser Ala Ala His Ala Pro His Leu
 50 55 60
 Lys Thr Ser Ile Leu Asp Phe Lys Leu Gly Ser Pro Gly Ala Ala Leu
 65 70 75 80
 Thr Ile Asp Leu Cys Ser Phe Leu Pro Asp Leu Lys Ala Ala Leu Met
 85 90 95
 Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Val Gly Asp Tyr
 100 105 110
 Phe Val Pro Val Ala Ser Ile Arg Gly Glu Gly Thr Ser Asp Ala Tyr
 115 120 125
 Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val Gln Lys Ala
 130 135 140
 Thr Thr Glu Val Leu Glu Asp Lys Lys Ala Asn Tyr His Ile Gly Ile
 145 150 155 160
 Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys Lys Phe Arg
 165 170 175
 Lys Lys Leu Tyr Glu Thr Lys Ala Gln Ser Ala Glu Met Glu Cys Ala
 180 185 190
 Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Ile Gly Ala Leu
 195 200 205
 Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Glu Gly Ile Lys Thr Lys
 210 215 220
 Ser Ser Gly Asn Phe Ile Phe Asn Thr Tyr Thr Glu Asp His Ile Leu
 225 230 235 240
 Thr Gly Gln Glu Val Ile Glu Asn Leu Glu Lys Val Met Leu Lys Arg

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<210> 491
<211> 394
<212> PRT
<213> Chlamydia pneumoniae
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<400>	491														
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Thr	Ile	Gly	His 20	Val	Asp	His	Gly	Lys 25	Thr	Thr	Leu	Thr	Ala 30	Ala	Ile
Thr	Arg	Ala 35	Leu	Ser	Gly	Asp 40	Gly	Leu	Ala	Ser	Phe 45	Arg	Asp	Tyr	Ser
Ser	Ile 50	Asp	Asn	Thr	Pro	Glu 55	Glu	Lys	Ala	Arg	Gly 60	Ile	Thr	Ile	Asn
Ala 65	Ser	His	Val	Glu	Tyr 70	Glu	Thr	Pro	Asn	Arg 75	His	Tyr	Ala	His	Val 80
Asp	Cys	Pro	Gly	His 85	Ala	Asp	Tyr	Val	Lys 90	Asn	Met	Ile	Thr	Gly 95	Ala
Ala	Gln	Met	Asp 100	Gly	Ala	Ile	Leu	Val	Lys 105	Ser	Ala	Thr	Asp	Gly 110	Ala
Met	Pro	Gln 115	Thr	Lys	Glu	His	Ile	Leu	Leu	Ala	Arg	Gln 125	Val	Gly	Val
Pro	Tyr 130	Ile	Val	Val	Phe	Leu 135	Asn	Lys	Val	Asp	Met 140	Ile	Ser	Gln	Glu
Asp 145	Ala	Glu	Leu	Ile	Asp 150	Leu	Val	Glu	Met	Glu 155	Leu	Ser	Glu	Leu	Leu 160
Glu	Glu	Lys	Gly	Tyr 165	Lys	Gly	Cys	Pro	Ile 170	Ile	Arg	Gly	Ser	Ala 175	Leu
Lys	Ala	Leu	Glu	Gly 180	Asp	Ala	Asn	Tyr 185	Ile	Glu	Lys	Val	Arg	Glu 190	Leu
Met	Gln 195	Ala	Val	Asp	Asp	Asn	Ile 200	Pro	Thr	Pro	Glu	Arg 205	Glu	Ile	Asp
Lys	Pro 210	Phe	Leu	Met	Pro	Ile 215	Glu	Asp	Val	Phe	Ser 220	Ile	Ser	Gly	Arg
Gly 225	Thr	Val	Val	Thr	Gly 230	Arg	Ile	Glu	Arg	Gly 235	Ile	Val	Lys	Val	Ser 240
Asp	Lys	Val	Gln	Leu 245	Val	Gly	Leu	Gly	Glu 250	Thr	Lys	Glu	Thr	Ile 255	Val
Thr	Gly	Val	Glu 260	Met	Phe	Arg	Lys	Glu 265	Leu	Pro	Glu	Gly	Arg 270	Ala	Gly
Glu	Asn	Val 275	Gly	Leu	Leu	Leu	Arg 280	Gly	Ile	Gly	Lys	Asn 285	Asp	Val	Glu
Arg	Gly 290	Met	Val	Val	Cys	Gln 295	Pro	Asn	Ser	Val	Lys 300	Pro	His	Thr	Lys
Phe 305	Lys	Ser	Ala	Val	Tyr 310	Val	Leu	Gln	Lys	Glu 315	Glu	Gly	Gly	Arg	His 320
Lys	Pro	Phe	Phe	Ser 325	Gly	Tyr	Arg	Pro	Gln 330	Phe	Phe	Phe	Arg	Thr	Thr
Asp	Val	Thr	Gly	Val	Val	Thr	Leu	Pro	Glu	Gly	Thr	Glu	Met	Val	Met

340 345 350
 Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
 385 390

<210> 492
 <211> 560
 <212> PRT
 <213> Chlamydia pneumoniae

<220>
 <221> VARIANT
 <222> (1)...(560)
 <223> Xaa = Any Amino Acid

<400> 492
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 Pro Leu His Phe Gly His Ile Ala Gly Val Tyr Leu Pro Ala Asp Val
 20 25 30
 Tyr Ala Arg Phe Arg Arg Leu Leu Gly Asp Asp Val Leu Tyr Ile Cys
 35 40 45
 Gly Ser Asp Glu Phe Gly Ile Ala Ile Thr Leu Asn Ala Asp Arg Glu
 50 55 60
 Gly Leu Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys Leu His Lys
 65 70 75 80
 Asp Thr Phe Glu Lys Leu Gly Phe Ala Leu Asp Phe Phe Ser Arg Thr
 85 90 95
 Thr Asn Pro Phe His Ala Glu Leu Val Gln Asp Phe Tyr Ser Gln Leu
 100 105 110
 Lys Ala Ser Gly Leu Ile Glu Asn Arg Ile Ser Glu Gln Leu Tyr Ser
 115 120 125
 Glu Gln Glu Gln Arg Phe Leu Ala Asp Arg Tyr Val Glu Gly Thr Cys
 130 135 140
 Pro Arg Cys Gly Phe Asp His Ala Arg Gly Asp Glu Cys Gln Ser Cys
 145 150 155 160
 Gly Ala Asp Tyr Glu Ala Ile Asp Leu Ile Gly Pro Lys Ser Lys Ile
 165 170 175
 Ser Gly Val Glu Leu Val Lys Lys Glu Thr Glu His Ser Tyr Phe Leu
 180 185 190
 Leu Asp Arg Met Lys Asp Ala Leu Leu Ser Phe Ile Gln Gly Cys Tyr
 195 200 205
 Leu Pro Asp His Val Arg Lys Phe Val Val Asp Tyr Ile Glu His Val
 210 215 220
 Arg Ser Arg Ala Ile Thr Arg Asp Leu Ser Trp Gly Ile Pro Val Pro
 225 230 235 240
 Asp Phe Pro Gly Lys Val Phe Tyr Val Trp Phe Asp Ala Pro Ile Gly
 245 250 255
 Tyr Ile Ser Gly Thr Met Glu Trp Ala Ala Ser Gln Gly Asn Pro Asp
 260 265 270
 Glu Trp Lys Arg Phe Trp Leu Glu Asp Gly Val Glu Tyr Val Gln Phe
 275 280 285
 Ile Gly Lys Asp Asn Leu Pro Phe His Ser Val Val Phe Pro Ala Met
 290 295 300

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<210> 493
<211> 97
<212> PRT
<213> Chlamydia pneumoniae
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<210> 494
<211> 205
<212> PRT
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<213> Chlamydia pneumoniae

<400> 494

Met	Asn	Lys	Ile	Leu	Val	Asp	Ser	Pro	Phe	Ser	Pro	Asp	His	Gln	Lys
1				5					10					15	
Cys	Cys	Pro	Lys	Leu	Phe	Thr	Ile	Ser	Ala	Pro	Ala	Gly	Val	Gly	Lys
			20					25					30		
Thr	Thr	Leu	Val	Arg	Met	Leu	Glu	Gln	Glu	Phe	Ser	Ser	Ala	Phe	Ala
		35					40					45			
Glu	Thr	Ile	Ser	Val	Thr	Thr	Arg	Lys	Pro	Arg	Glu	Gly	Glu	Val	Pro
	50					55					60				
Gly	Lys	Asp	Tyr	His	Phe	Val	Ser	His	Glu	Glu	Phe	Gln	Arg	Leu	Leu
65					70					75					80
Asp	Arg	Gln	Ala	Leu	Leu	Glu	Trp	Val	Phe	Leu	Phe	Gly	Glu	Cys	Tyr
				85					90					95	
Gly	Thr	Ser	Met	Leu	Glu	Ile	Glu	Arg	Ile	Trp	Ser	Leu	Gly	Lys	His
			100					105					110		
Ala	Val	Ala	Val	Ile	Asp	Ile	Gln	Gly	Ala	Leu	Phe	Ile	Arg	Ser	Arg
			115				120					125			
Met	Pro	Ser	Val	Ser	Ile	Phe	Ile	Ala	Pro	Pro	Ser	Gln	Glu	Glu	Leu
	130					135					140				
Glu	Arg	Arg	Leu	Ala	Ser	Arg	Gly	Ser	Glu	Glu	Gly	Ser	Gln	Arg	Lys
145					150					155					160
Glu	Arg	Leu	Glu	His	Ser	Leu	Ile	Glu	Leu	Ala	Ala	Ala	Asn	Gln	Phe
				165					170					175	
Asp	Tyr	Val	Ile	Ile	Asn	Asp	Asp	Leu	Asn	Gln	Ala	Tyr	Arg	Val	Leu
			180					185					190		
Lys	Ser	Ile	Phe	Ile	Ala	Glu	Glu	His	Arg	Asn	Ile	Leu			
		195					200					205			

<210> 495

<211> 602

<212> PRT

<213> Chlamydia pneumoniae

<400> 495

Met	Lys	Glu	Tyr	Lys	Ile	Glu	Asn	Ile	Arg	Asn	Phe	Ser	Ile	Ile	Ala
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His	Ile	Asp	His	Gly	Lys	Ser	Thr	Ile	Ala	Asp	Arg	Leu	Leu	Glu	Ser
			20					25					30		
Thr	Ser	Thr	Val	Glu	Glu	Arg	Glu	Met	Arg	Glu	Gln	Leu	Leu	Asp	Ser
		35					40					45			
Met	Asp	Leu	Glu	Arg	Glu	Arg	Gly	Ile	Thr	Ile	Lys	Ala	His	Pro	Val
	50					55					60				
Thr	Met	Thr	Tyr	Leu	Tyr	Glu	Gly	Glu	Val	Tyr	Gln	Leu	Asn	Leu	Ile
65					70					75					80
Asp	Thr	Pro	Gly	His	Val	Asp	Phe	Ser	Tyr	Glu	Val	Ser	Arg	Ser	Leu
				85					90					95	
Ser	Ala	Cys	Glu	Gly	Ala	Leu	Leu	Ile	Val	Asp	Ala	Ala	Gln	Gly	Val
			100					105					110		
Gln	Ala	Gln	Ser	Leu	Ala	Asn	Val	Tyr	Leu	Ala	Leu	Glu	Arg	Asp	Leu
			115				120					125			
Glu	Ile	Ile	Pro	Val	Leu	Asn	Lys	Ile	Asp	Leu	Pro	Ala	Ala	Asp	Pro
	130					135					140				
Val	Arg	Ile	Ala	Gln	Gln	Ile	Glu	Asp	Tyr	Ile	Gly	Leu	Asp	Thr	Thr
145					150					155					160
Asn	Ile	Ile	Ala	Cys	Ser	Ala	Lys	Thr	Gly	Gln	Gly	Ile	Pro	Ala	Ile

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<210> 496

<400> 496

<400> 497

Met Lys Leu Leu Lys Ala Val Leu Arg His Lys Asn His Leu Val
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Ile Leu Gly Cys Ser Leu Leu Ala Ile Leu Gly Leu Thr Phe Ser Ser

			20					25					30		
Gln	Met	Glu	Ile	Phe	Ser	Leu	Gly	Met	Ile	Ala	Lys	Thr	Gly	Pro	Asp
		35					40					45			
Ala	Phe	Leu	Leu	Phe	Gly	Arg	Lys	Glu	Ser	Gly	Lys	Leu	Val	Lys	Val
	50				55						60				
Ser	Glu	Leu	Ser	Gln	Lys	Asp	Ile	Leu	Glu	Asn	Trp	Gln	Ala	Ile	Ser
65					70					75				80	
Lys	Asp	Ser	Glu	Thr	Leu	Thr	Val	Ser	Asp	Ala	Thr	Thr	Tyr	Ile	Ala
				85					90					95	
Glu	His	Gly	Lys	Ser	Thr	Ala	Ser	Leu	Thr	Ser	Lys	Leu	Ser	Lys	Phe
			100				105					110			
Val	Arg	Asn	Tyr	Ile	Asp	Val	Ser	Arg	Phe	Arg	Gly	Leu	Ala	Ile	Phe
		115					120					125			
Leu	Ile	Cys	Val	Ala	Ile	Phe	Lys	Ala	Val	Thr	Leu	Phe	Phe	Gln	Arg
	130					135					140				
Phe	Leu	Gly	Gln	Val	Val	Ala	Ile	Arg	Val	Ser	Arg	Asp	Leu	Arg	Gln
145					150					155					160
Asp	Tyr	Phe	Lys	Ala	Leu	Gln	Gln	Leu	Pro	Met	Thr	Phe	Phe	His	Asp
				165					170					175	
His	Asp	Ile	Gly	Asn	Leu	Ser	Asn	Arg	Val	Met	Thr	Asp	Ser	Ala	Ser
			180					185					190		
Ile	Ala	Leu	Ala	Val	Asn	Ser	Leu	Met	Ile	Asn	Tyr	Ile	Gln	Ala	Pro
		195					200					205			
Ile	Thr	Phe	Ile	Leu	Thr	Leu	Gly	Val	Cys	Leu	Ser	Ile	Ser	Trp	Lys
	210					215					220				
Phe	Ser	Ile	Leu	Ile	Cys	Val	Ala	Phe	Pro	Ile	Phe	Ile	Leu	Pro	Ile
225					230					235					240
Val	Val	Ile	Ala	Arg	Lys	Ile	Lys	Asn	Leu	Ala	Lys	Arg	Ile	Gln	Lys
				245					250					255	
Ser	Gln	Asp	Ser	Phe	Ser	Ser	Val	Leu	Tyr	Asp	Phe	Leu	Ala	Gly	Val
			260					265					270		
Met	Thr	Val	Lys	Val	Phe	Arg	Thr	Glu	Lys	Phe	Ala	Phe	Thr	Lys	Tyr
		275					280					285			
Cys	Glu	His	Asn	Asn	Lys	Ile	Ser	Ala	Leu	Glu	Glu	Lys	Ser	Ala	Ala
	290					295					300				
Tyr	Gly	Leu	Leu	Pro	Arg	Pro	Leu	Leu	His	Thr	Ile	Ala	Ser	Leu	Phe
305					310					315					320
Phe	Ala	Phe	Val	Val	Val	Ile	Gly	Ile	Tyr	Lys	Phe	Ala	Ile	Pro	Pro
				325					330					335	
Glu	Glu	Leu	Ile	Val	Phe	Cys	Gly	Leu	Leu	Tyr	Leu	Ile	Tyr	Asp	Pro
			340					345					350		
Ile	Lys	Lys	Phe	Gly	Asp	Glu	Asn	Thr	Ser	Ile	Met	Arg	Gly	Cys	Ala
		355					360					365			
Ala	Ala	Glu	Arg	Phe	Tyr	Glu	Val	Leu	Asn	His	Pro	Asp	Leu	His	Ser
	370					375									

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<210> 498
<211> 411
<212> PRT
<213> Chlamydia pneumoniae
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<400> 498															
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Ser	Gly	Phe	Ile 20	Ser	Leu	Ser	Gln	Ile 25	Ala	Leu	Phe	Ser	Leu 30	Pro	Thr
Ser	Leu	Ile 35	Ser	His	Tyr	Lys	Arg 40	Ser	Lys	Ser	Lys	Lys 45	Gln	Gln	Arg
Val	Ala 50	Thr	Leu	Leu	Leu	His 55	Pro	His	His	Leu	Leu 60	Ile	Thr	Leu	Ile
Phe 65	Cys	Asp	Ile	Gly	Leu 70	Asn	Ile	Ala	Ile	Gln 75	Asn	Cys	Phe	Ala 80	Ile
Leu	Phe	Gly	Asp 85	Ala	Ala	Ser	Trp	Trp	Phe 90	Thr	Val	Gly	Leu 95	Pro	Leu
Ala	Ile	Thr	Leu 100	Ile	Leu	Gly	Glu	Ile 105	Leu	Pro	Lys	Ala	Val 110	Ala	Leu
Pro	Phe	Asn 115	Thr	Gln	Ile	Ala	Ser	Ser 120	Val	Ala	Pro	Leu 125	Ile	Leu	Cys
Val	Thr 130	Lys	Ile	Phe	Lys	Pro 135	Leu	Leu	His	Trp	Gly 140	Ile	Val	Gly	Ile
Asn 145	Tyr	Val	Val	Gln	Trp 150	Ile	Leu	Ser	Lys	Gln 155	Gln	Ile	Asp	Ile 160	Ile
Gln	Pro	Gln	Glu 165	Leu	Lys	Glu	Val	Leu	Gln 170	Ser	Cys	Lys	Asp	Phe 175	Gly
Val	Val	Asn 180	Gln	Glu	Glu	Ser	Arg	Leu 185	Leu	Tyr	Gly	Tyr	Leu 190	Ser	Leu
Ser	Asp	Cys 195	Ser	Val	Lys	Glu	Arg 200	Met	Gln	Pro	Arg	Gln 205	Asp	Ile	Leu

Phe Tyr Asp Ile Gln Thr Pro Leu Glu Asn Leu Tyr Leu Leu Phe Ser
 210 215 220
 Lys Gln His Cys Ser Arg Val Pro Ile Cys Asn Asp Asn Leu Gln Asn
 225 230 235 240
 Leu Leu Gly Ile Cys Thr Ala Arg Ser Leu Leu Leu His Asp Lys Pro
 245 250 255
 Leu Gln Ser Ser Asp Asp Leu Leu Pro Leu Leu Lys Lys Pro Tyr Tyr
 260 265 270
 Met Pro Glu Thr Ile Ser Ala Lys Met Ala Leu Cys Gln Met Ala Ala
 275 280 285
 Glu Asp Glu Thr Leu Gly Met Ile Ile Asp Glu Tyr Gly Ser Ile Glu
 290 295 300
 Gly Leu Ile Thr Gln Glu Asp Leu Phe Glu Ile Val Ala Gly Glu Ile
 305 310 315 320
 Val Asp Gln Arg Asp Asn Lys Ile Leu Tyr Thr Thr Ser Gly Ala Asp
 325 330 335
 Val Ile Ile Ala Ser Gly Thr Leu Glu Leu Arg Glu Phe Ser Glu Ile
 340 345 350
 Phe Asp Ile Asn Leu Pro Thr Asn Asn Asn Ile Ala Thr Ile Gly Gly
 355 360 365
 Trp Leu Ile Glu Gln Ile Gly Thr Ile Pro Thr Thr Gly Met Lys Leu
 370 375 380
 Ser Trp Asn Asn Leu Leu Phe Gln Val Leu Asp Ala Ala Pro Asn Arg
 385 390 395 400
 Ile Arg Arg Val Tyr Ile Arg Lys Leu Tyr Asp
 405 410

<210> 499
 <211> 404
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 499
 Met Thr Asn Ser Ala Leu Phe Trp Ile Gly Val Asn Ile Ile Cys Ile
 1 5 10 15
 Val Leu Gln Gly Phe Tyr Ser Met Met Glu Met Ala Cys Val Ser Phe
 20 25 30
 Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Asp His Lys Lys Ala
 35 40 45
 Arg Tyr Ile Asn Phe Leu Ile Arg Arg Pro Tyr Arg Leu Phe Gly Thr
 50 55 60
 Val Met Leu Gly Val Asn Ile Ala Leu Gln Val Gly Ser Glu Ser Ser
 65 70 75 80
 Arg Asn Cys Tyr Arg Ala Leu Gly Ile Thr Pro Asp Tyr Ala Pro Phe
 85 90 95
 Thr Gln Ile Phe Ile Val Val Ile Phe Ala Glu Leu Leu Pro Leu Thr
 100 105 110
 Ile Ser Arg Lys Ile Pro Glu Lys Leu Ala Leu Trp Gly Ala Pro Ile
 115 120 125
 Leu Tyr Tyr Ser His Tyr Ile Phe Tyr Pro Leu Ile Gln Leu Ile Gly
 130 135 140
 Ser Leu Thr Glu Gly Leu Tyr Tyr Leu Leu Asn Ile Arg Lys Glu Lys
 145 150 155 160
 Leu Asn Ser Thr Leu Ser Arg Asp Glu Phe Gln Lys Ala Leu Glu Thr
 165 170 175
 His His Glu Glu Gln Asp Phe Asn Thr Ile Ala Thr Asn Ile Phe Ser
 180 185 190


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<210> 501
<211> 103
<212> PRT
<213> Chlamydia pneumoniae
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<400> 501
Met Ser Phe Lys Arg Phe Leu Gln Gln Ile Pro Val Arg Ile Cys Leu
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Leu Ile Ile Tyr Leu Tyr Gln Trp Leu Ile Ser Pro Leu Leu Gly Ser
20 25 30

Cys Cys Arg Phe Phe Pro Ser Cys Ser His Tyr Ala Glu Gln Ala Leu
 35 40 45
 Lys Ser His Gly Phe Leu Met Gly Cys Trp Leu Ser Ile Lys Arg Ile
 50 55 60
 Gly Lys Cys Gly Pro Trp His Pro Gly Gly Ile Asp Met Val Pro Lys
 65 70 75 80
 Thr Ala Leu Gln Glu Val Leu Glu Pro Tyr Gln Glu Ile Asp Gly Gly
 85 90 95
 Asp Ser Ser His Phe Ser Glu
 100

<210> 502

<211> 362

<212> PRT

<213> Chlamydia pneumoniae

<400> 502

Met Ala Phe Lys Arg Lys Thr Arg Trp Leu Trp Gln Val Leu Ile Leu
 1 5 10 15
 Ser Val Gly Leu Asn Met Leu Phe Leu Leu Leu Phe Tyr Ser Ala Ile
 20 25 30
 Phe Arg Lys Asp Ile Tyr Lys Leu His Leu Phe Ser Gly Pro Leu Ile
 35 40 45
 Ala Lys Ser Ser Arg Lys Val Tyr Leu Ser Glu Asp Phe Leu Asn Glu
 50 55 60
 Ile Ser Gln Ala Ser Leu Asp Asp Leu Ile Ser Leu Phe Lys Asp Glu
 65 70 75 80
 Arg Tyr Met Tyr Gly Arg Pro Ile Lys Leu Trp Ala Leu Ser Val Ala
 85 90 95
 Ile Ala Ser His His Ile Asp Ile Thr Pro Val Leu Ser Lys Pro Leu
 100 105 110
 Thr Tyr Thr Glu Leu Lys Gly Ser Ser Val Arg Trp Leu Leu Pro Asn
 115 120 125
 Ile Asp Leu Lys Asp Phe Pro Val Ile Leu Asp Tyr Leu Arg Cys His
 130 135 140
 Lys Tyr Pro Tyr Thr Ser Lys Gly Leu Phe Leu Leu Ile Glu Lys Met
 145 150 155 160
 Val Gln Glu Gly Trp Val Asp Glu Asp Cys Leu Tyr His Phe Cys Ser
 165 170 175
 Thr Pro Glu Phe Leu Tyr Leu Arg Thr Leu Leu Val Gly Ala Asp Val
 180 185 190
 Gln Ala Ser Ser Val Ala Ser Leu Ala Arg Met Val Ile Arg Cys Gly
 195 200 205
 Ser Glu Arg Phe Phe His Phe Cys Asn Glu Glu Ser Arg Thr Ser Met
 210 215 220
 Ile Ser Ala Thr Gln Arg Gln Lys Val Leu Lys Ser Tyr Leu Asp Cys
 225 230 235 240
 Glu Glu Ser Leu Ala Ala Leu Leu Leu Leu Val His Asp Ser Asp Val
 245 250 255
 Val Leu His Glu Phe Cys Asp Glu Asp Leu Glu Lys Val Ile Arg Leu
 260 265 270
 Met Pro Gln Glu Ser Pro Tyr Ser Gln Asn Phe Phe Ser Arg Leu Gln
 275 280 285
 His Ser Pro Arg Arg Glu Leu Ala Cys Met Ser Thr Gln Arg Val Glu
 290 295 300
 Ala Pro Arg Val Gln Glu Asp Gln Asp Glu Glu Tyr Val Val Gln Asp
 305 310 315 320

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Gly Asp Ser Leu Trp Leu Ile Ala Lys Arg Phe Gly Ile Pro Met Asp
 325 330 335
 Lys Ile Ile Gln Lys Asn Gly Leu Asn His His Arg Leu Phe Pro Gly
 340 345 350
 Lys Val Leu Lys Leu Pro Ala Lys Gln Ser
 355 360

<210> 503
 <211> 582
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 503
 Met Ser Gly Lys Lys Asp Gly Val Arg Gly Met Ile Phe Val Pro Leu
 1 5 10 15
 Ser Ile Leu Val Leu Ile Phe Leu Pro Leu Pro Gln Ile Leu Leu Asp
 20 25 30
 Phe Gly Leu Cys Ile Ser Phe Ala Leu Ser Leu Leu Thr Val Cys Trp
 35 40 45
 Val Phe Thr Leu Asn Ser Ser Asn Ser Ala Lys Leu Phe Pro Pro Phe
 50 55 60
 Phe Leu Tyr Leu Cys Leu Leu Arg Leu Gly Leu Asn Leu Ala Ser Thr
 65 70 75 80
 Arg Trp Ile Val Ser Ser Gly Thr Ala Ser Ser Leu Ile Val Ser Leu
 85 90 95
 Gly Ser Phe Phe Ser Leu Gly Ser Leu Trp Ala Ala Thr Phe Ala Cys
 100 105 110
 Leu Leu Leu Phe Phe Val Asn Phe Leu Met Val Ser Lys Gly Ser Glu
 115 120 125
 Arg Ile Ala Glu Val Arg Ser Arg Phe Phe Leu Glu Ala Leu Pro Ala
 130 135 140
 Lys Gln Met Ala Leu Asp Ser Asp Leu Val Ser Gly Arg Ala Ser Tyr
 145 150 155 160
 Lys Ala Val Lys Lys Gln Lys Asn Ala Leu Ile Glu Glu Gly Asp Phe
 165 170 175
 Phe Ser Ala Met Glu Gly Val Phe Arg Phe Val Lys Gly Asp Ala Ile
 180 185 190
 Ile Ser Cys Ile Leu Leu Leu Val Asn Val Val Ser Val Thr Cys Leu
 195 200 205
 Tyr Tyr Thr Ser Gly Tyr Ala Leu Glu Gln Met Trp Phe Thr Val Leu
 210 215 220
 Gly Asp Ala Leu Val Ser Gln Val Pro Ala Leu Leu Thr Ser Cys Ala
 225 230 235 240
 Ala Ala Thr Leu Ile Ser Lys Ile Asp Lys Glu Glu Ser Leu Leu Asn
 245 250 255
 Tyr Leu Phe Glu Tyr Tyr Lys Gln Leu Arg Gln His Phe Arg Val Val
 260 265 270
 Ser Leu Leu Ile Phe Ser Leu Cys Cys Ile Pro Ser Ser Pro Lys Phe
 275 280 285
 Pro Ile Val Leu Leu Ala Ser Leu Leu Trp Leu Ala Tyr Arg Lys Glu
 290 295 300
 Glu Pro Ala Ser Glu Asp Ser Cys Ile Glu Arg Ala Phe Ser Tyr Val
 305 310 315 320
 Glu Gly Ala Cys Pro Lys Glu Gln Glu Ser Gln Phe Tyr Gln Val Tyr
 325 330 335
 Arg Ala Ala Ser Glu Glu Val Phe Glu Asp Leu Gly Val Arg Leu Pro
 340 345 350

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Val Leu Thr Ser Leu Arg Ile Glu Glu Arg Pro Trp Leu Arg Val Phe
 355 360 365
 Gly Gln Asn Val Tyr Leu Asp Glu Met Thr Pro Glu Ala Val Leu Pro
 370 375 380
 Phe Leu Arg Asn Ile Ala His Glu Ala Leu Asn Ala Glu Val Val Gln
 385 390 395 400
 Lys Tyr Leu Glu Glu Ser Glu Arg Val Phe Gly Ile Ala Val Glu Asp
 405 410 415
 Ile Val Pro Lys Lys Ile Ser Leu Ser Ser Leu Val Val Leu Ser Arg
 420 425 430
 Leu Leu Val Arg Glu Arg Val Ser Leu Lys Leu Phe Pro Lys Ile Leu
 435 440 445
 Glu Ala Val Ala Val Tyr Gln Asn Ser Gly Asp Ser Leu Glu Ile Leu
 450 455 460
 Ala Glu Lys Val Arg Lys Ser Leu Gly Tyr Trp Ile Gly Arg Ser Leu
 465 470 475 480
 Trp Asp Gln Lys Gln Thr Leu Glu Val Ile Thr Ile Asp Phe His Val
 485 490 495
 Glu Glu Leu Ile Asn Ser Ser Tyr Ser Lys Ser Asn Pro Val Met Gln
 500 505 510
 Glu Asn Val Ile Arg Arg Val Asp Ser Leu Leu Glu Arg Ser Val Phe
 515 520 525
 Lys Asp Phe Arg Ala Ile Val Thr Ser Cys Glu Thr Arg Phe Glu Met
 530 535 540
 Lys Lys Met Leu Asp Pro His Phe Pro Asp Leu Leu Val Leu Ser His
 545 550 555 560
 Asp Glu Leu Pro Lys Glu Ile Pro Ile Ser Phe Leu Gly Ile Val Ser
 565 570 575
 Asp Glu Val Leu Val Pro
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<210> 504

<211> 435

<212> PRT

<213> Chlamydia pneumoniae

<400> 504

Met Phe Ser Arg Trp Ile Thr Leu Phe Leu Leu Phe Ile Ser Leu Thr
 1 5 10 15
 Gly Cys Ser Ser Tyr Ser Ser Lys His Lys Gln Ser Leu Ile Pro
 20 25 30
 Ile His Asp Asp Pro Val Ala Phe Ser Pro Glu Gln Ala Lys Arg Ala
 35 40 45
 Met Asp Leu Ser Ile Ala Gln Leu Leu Phe Asp Gly Leu Thr Arg Glu
 50 55 60
 Thr His Arg Glu Ser Asn Asp Leu Glu Leu Ala Ile Ala Ser Arg Tyr
 65 70 75 80
 Thr Val Ser Glu Asp Phe Cys Ser Tyr Thr Phe Phe Ile Lys Asp Ser
 85 90 95
 Ala Leu Trp Ser Asp Gly Thr Pro Ile Thr Ser Glu Asp Ile Arg Asn
 100 105 110
 Ala Trp Glu Tyr Ala Gln Glu Asn Ser Pro His Ile Gln Ile Phe Gln
 115 120 125
 Gly Leu Asn Phe Ser Thr Pro Ser Ser Asn Ala Ile Thr Ile His Leu
 130 135 140
 Asp Ser Pro Asn Pro Asp Phe Pro Lys Leu Leu Ala Phe Pro Ala Phe
 145 150 155 160

T03440 "212301"

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<210> 505
<211> 171
<212> PRT
<213> Chlamydia pneumoniae
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<400> 505															
Met	Lys	Lys	Leu	Leu	Phe	Ser	Thr	Phe	Leu	Leu	Val	Leu	Gly	Ser	Thr
1				5					10					15	
Ser	Ala	Ala	His	Ala	Asn	Leu	Gly	Tyr	Val	Asn	Leu	Lys	Arg	Cys	Leu
			20					25					30		
Glu	Glu	Ser	Asp	Leu	Gly	Lys	Lys	Glu	Thr	Glu	Glu	Leu	Glu	Ala	Met
		35					40					45			
Lys	Gln	Gln	Phe	Val	Lys	Asn	Ala	Glu	Lys	Ile	Glu	Glu	Glu	Leu	Thr
	50					55					60				
Ser	Ile	Tyr	Asn	Lys	Leu	Gln	Asp	Glu	Asp	Tyr	Met	Glu	Ser	Leu	Ser
65				70						75				80	
Asp	Ser	Ala	Ser	Glu	Glu	Leu	Arg	Lys	Lys	Phe	Glu	Asp	Leu	Ser	Gly
				85					90					95	
Glu	Tyr	Asn	Ala	Tyr	Gln	Ser	Gln	Tyr	Tyr	Gln	Ser	Ile	Asn	Gln	Ser
			100					105					110		

Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys Ile Ala Ala
 115 120 125
 Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu Asn Glu Glu
 130 135 140
 Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr Glu Ile Ile
 145 150 155 160
 Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn
 165 170

<210> 506

<211> 360

<212> PRT

<213> Chlamydia pneumoniae

<400> 506

Met Ser Glu Ala Pro Val Tyr Thr Leu Lys Gln Leu Ala Glu Leu Leu
 1 5 10 15
 Gln Val Glu Val Gln Gly Asn Ile Glu Thr Pro Ile Ser Gly Val Glu
 20 25 30
 Asp Ile Ser Gln Ala Gln Pro His His Ile Ala Phe Leu Asp Asn Glu
 35 40 45
 Lys Tyr Ser Ser Phe Leu Lys Asn Thr Lys Ala Gly Ala Ile Ile Leu
 50 55 60
 Ser Arg Ser Gln Ala Met Gln His Ala His Leu Lys Lys Asn Phe Leu
 65 70 75 80
 Ile Thr Asn Glu Ser Pro Ser Leu Thr Phe Gln Lys Cys Ile Glu Leu
 85 90 95
 Phe Ile Glu Pro Val Thr Ser Gly Phe Pro Gly Ile His Pro Thr Ala
 100 105 110
 Val Ile His Pro Thr Ala Arg Ile Glu Lys Asn Val Thr Ile Glu Pro
 115 120 125
 Tyr Val Val Ile Ser Gln His Ala His Ile Gly Ser Asp Thr Tyr Ile
 130 135 140
 Gly Ala Gly Ser Val Ile Gly Ala His Ser Val Leu Gly Ala Asn Cys
 145 150 155 160
 Leu Ile His Pro Lys Val Val Ile Arg Glu Arg Val Leu Met Gly Asn
 165 170 175
 Arg Val Val Val Gln Pro Gly Ala Val Leu Gly Ser Cys Gly Phe Gly
 180 185 190
 Tyr Ile Thr Asn Ala Phe Gly His His Lys Pro Leu Lys His Leu Gly
 195 200 205
 Tyr Val Ile Val Gly Asp Asp Val Glu Ile Gly Ala Asn Thr Thr Ile
 210 215 220
 Asp Arg Gly Arg Phe Lys Asn Thr Val Ile His Glu Gly Thr Lys Ile
 225 230 235 240
 Asp Asn Gln Val Gln Val Ala His His Val Glu Ile Gly Lys His Ser
 245 250 255
 Ile Ile Val Ala Gln Ala Gly Ile Ala Gly Ser Thr Lys Ile Gly Glu
 260 265 270
 His Val Ile Gly Gly Gln Thr Gly Ile Thr Gly His Ile Ser Ile
 275 280 285
 Ala Asp His Val Ile Met Ile Ala Gln Thr Gly Val Thr Lys Ser Ile
 290 295 300
 Thr Ser Pro Gly Ile Tyr Gly Gly Ala Pro Ala Arg Pro Tyr Gln Glu
 305 310 315 320
 Thr His Arg Leu Ile Ala Lys Ile Arg Asn Leu Pro Lys Thr Glu Glu
 325 330 335

09041132 040301

Arg Leu Ser Lys Leu Glu Lys Gln Val Arg Asp Leu Ser Thr Pro Ser
 340 345 350
 Leu Ala Glu Ile Pro Ser Glu Ile
 355 360

<210> 507
 <211> 399
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 507
 Met Ala Ala Ser Gly Gly Thr Gly Gly Leu Gly Gly Thr Gln Gly Val
 1 5 10 15
 Asn Leu Ala Ala Val Glu Ala Ala Ala Lys Ala Asp Ala Ala Glu
 20 25 30
 Val Val Ala Ser Gln Glu Gly Ser Glu Met Asn Met Ile Gln Gln Ser
 35 40 45
 Gln Asp Leu Thr Asn Pro Ala Ala Ala Thr Arg Thr Lys Lys Lys Glu
 50 55 60
 Glu Lys Phe Gln Thr Leu Glu Ser Arg Lys Lys Gly Glu Ala Gly Lys
 65 70 75 80
 Ala Glu Lys Lys Ser Glu Ser Thr Glu Glu Lys Pro Asp Thr Asp Leu
 85 90 95
 Ala Asp Lys Tyr Ala Ser Gly Asn Ser Glu Ile Ser Gly Gln Glu Leu
 100 105 110
 Arg Gly Leu Arg Asp Ala Ile Gly Asp Asp Ala Ser Pro Glu Asp Ile
 115 120 125
 Leu Ala Leu Val Gln Glu Lys Ile Lys Asp Pro Ala Leu Gln Ser Thr
 130 135 140
 Ala Leu Asp Tyr Leu Val Gln Thr Thr Pro Pro Ser Gln Gly Lys Leu
 145 150 155 160
 Lys Glu Ala Leu Ile Gln Ala Arg Asn Thr His Thr Glu Gln Phe Gly
 165 170 175
 Arg Thr Ala Ile Gly Ala Lys Asn Ile Leu Phe Ala Ser Gln Glu Tyr
 180 185 190
 Ala Asp Gln Leu Asn Val Ser Pro Ser Gly Leu Arg Ser Leu Tyr Leu
 195 200 205
 Glu Val Thr Gly Asp Thr His Thr Cys Asp Gln Leu Leu Ser Met Leu
 210 215 220
 Gln Asp Arg Tyr Thr Tyr Gln Asp Met Ala Ile Val Ser Ser Phe Leu
 225 230 235 240
 Met Lys Gly Met Ala Thr Glu Leu Lys Arg Gln Gly Pro Tyr Val Pro
 245 250 255
 Ser Ala Gln Leu Gln Val Leu Met Thr Glu Thr Arg Asn Leu Gln Ala
 260 265 270
 Val Leu Thr Ser Tyr Asp Tyr Phe Glu Ser Arg Val Pro Ile Leu Leu
 275 280 285
 Asp Ser Leu Lys Ala Glu Gly Ile Gln Thr Pro Ser Asp Leu Asn Phe
 290 295 300
 Val Lys Val Ala Glu Ser Tyr His Lys Ile Ile Asn Asp Lys Phe Pro
 305 310 315 320
 Thr Ala Ser Lys Val Glu Arg Glu Val Arg Asn Leu Ile Gly Asp Asp
 325 330 335
 Val Asp Ser Val Thr Gly Val Leu Asn Leu Phe Phe Ser Ala Leu Arg
 340 345 350
 Gln Thr Ser Ser Arg Leu Phe Ser Ser Ala Asp Lys Arg Gln Gln Leu
 355 360 365

TE340 " 2430430

Gly Ala Met Ile Ala Asn Ala Leu Asp Ala Val Asn Ile Asn Asn Glu
 370 375 380
 Asp Tyr Pro Lys Ala Ser Asp Phe Pro Lys Pro Tyr Pro Trp Ser
 385 390 395

<210> 508
 <211> 224
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 508
 Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp Gln His
 1 5 10 15
 Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys Leu Glu
 20 25 30
 Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His Ile Lys
 35 40 45
 Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp Asp Leu
 50 55 60
 Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu Ala Gly
 65 70 75 80
 Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser Leu Gly
 85 90 95
 Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala Ala Gln
 100 105 110
 Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln Leu Ala
 115 120 125
 Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro Gln Val
 130 135 140
 Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val Ser Ala
 145 150 155 160
 Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile Lys His
 165 170 175
 Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg Glu Asn
 180 185 190
 Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr Leu Trp
 195 200 205
 Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser Cys Lys
 210 215 220

<210> 509
 <211> 246
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 509
 Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr Asp Asp
 1 5 10 15
 Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu Arg Ser
 20 25 30
 Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val
 35 40 45
 Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln Glu Ala
 50 55 60
 Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr Lys Lys
 65 70 75 80
 Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn Val Glu

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<210> 510
<211> 353
<212> PRT
<213> Chlamydia pneumoniae
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Met 1	Asn	Lys	Arg	Gln 5	Lys	Asp	Lys	Leu	Lys 10	Ile	Cys	Val	Ile	Ile 15	Ser
Thr	Leu	Ile	Leu 20	Val	Gly	Ile	Phe	Ala 25	Arg	Ala	Pro	Arg	Gly 30	Asp	Thr
Phe	Lys	Thr 35	Phe	Leu	Lys	Ser 40	Glu	Ala	Ile	Ile	Tyr 45	Ser	Asn	Gln	
Cys	Asn 50	Glu	Asp	Met	Arg	Lys 55	Ile	Leu	Cys	Asp 60	Ala	Ile	Glu	His	Ala
Asp 65	Glu	Glu	Ile	Phe 70	Leu	Arg	Ile	Tyr	Asn 75	Leu	Ser	Glu	Pro	Lys 80	Ile
Gln	Gln	Ser	Leu 85	Thr	Arg	Gln	Ala	Gln 90	Ala	Lys	Asn	Lys	Val	Thr 95	Ile
Tyr	Tyr	Gln 100	Lys	Phe	Lys	Ile	Pro	Gln 105	Ile	Leu	Lys	Gln	Ala 110	Ser	Asn
Val	Thr 115	Leu	Val	Glu	Gln	Pro 120	Pro	Ala	Gly	Arg	Lys	Leu 125	Met	His	Gln
Lys	Ala 130	Leu	Ser	Ile	Asp	Lys 135	Lys	Asp	Ala	Trp 140	Leu	Gly	Ser	Ala	Asn
Tyr 145	Thr	Asn	Leu	Ser 150	Leu	Arg	Leu	Asp	Asn 155	Asn	Leu	Ile	Leu	Gly 160	Met
His	Ser	Ser	Glu 165	Leu	Cys	Asp	Leu	Ile 170	Ile	Thr	Asn	Thr	Ser	Gly 175	Asp
Phe	Ser	Ile 180	Lys	Asp	Gln	Thr	Gly	Lys 185	Tyr	Phe	Val	Leu 190	Pro	Gln	Asp
Arg	Lys 195	Ile	Ala	Ile	Gln	Ala 200	Val	Leu	Glu	Lys	Ile 205	Gln	Thr	Ala	Gln
Lys	Thr 210	Ile	Gln	Val	Ala 215	Met	Phe	Ala	Leu	Thr 220	His	Ser	Glu	Ile	Ile
Gln	Ala	Leu	His	Gln	Ala	Lys	Gln	Arg	Gly	Ile	His	Val	Asp	Ile	Ile

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<210> 511
<211> 186
<212> PRT
<213> Chlamydia pneumoniae
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<210> 512
<211> 276
<212> PRT
<213> Chlamydia pneumoniae
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<220>
<221> VARIANT
<222> (1)...(276)
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Ala	Arg	Asp	Tyr	Ile	Val	Tyr	Arg	Asp	Gln	Arg	Lys	Ala	Glu	Arg	Gly
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Asn	Ser	Ser	Ser	Ile	Ile	Ala	Ile	Ile	Arg	Arg	Asp	Gly	Gly	Ser	Ala
		115					120					125			
Lys	Phe	Asn	Pro	Met	Lys	Ile	Ser	Ala	Ala	Leu	Glu	Lys	Ala	Phe	Arg
	130					135					140				
Ala	Thr	Leu	Gln	Ile	Asn	Gly	Met	Thr	Pro	Pro	Ala	Thr	Leu	Ser	Glu
145					150					155					160
Ile	Asn	Asp	Leu	Thr	Leu	Arg	Ile	Val	Glu	Asp	Val	Leu	Ser	Leu	His
				165					170					175	
Gly	Glu	Glu	Ala	Ile	Asn	Leu	Glu	Glu	Ile	Gln	Asp	Ile	Val	Glu	Lys
			180					185					190		
Gln	Leu	Met	Val	Ala	Gly	Tyr	Tyr	Asp	Val	Ala	Lys	Asn	Tyr	Ile	Leu
		195					200					205			
Tyr	Arg	Glu	Ala	Arg	Ala	Arg	Ala	Arg	Ala	Asn	Lys	Asp	Gln	Asp	Gly
	210					215					220				
Gln	Glu	Glu	Phe	Val	Pro	Gln	Glu	Glu	Thr	Tyr	Val	Val	Gln	Lys	Glu
225					230					235					240
Asp	Gly	Thr	Thr	Tyr	Leu	Leu	Arg	Lys	Thr	Asp	Leu	Glu	Lys	Arg	Phe
				245					250					255	
Ser	Trp	Ala	Cys	Lys	Arg	Phe	Pro	Lys	Thr	Thr	Asp	Ser	Gln	Leu	Leu
			260					265					270		
Ala	Asp	Met	Ala	Phe	Met	Asn	Leu	Tyr	Ser	Gly	Ile	Lys	Glu	Asp	Glu
		275					280					285			
Val	Thr	Thr	Ala	Cys	Ile	Met	Ala	Ala	Arg	Ala	Asn	Ile	Glu	Arg	Glu
	290					295					300				
Pro	Asp	Tyr	Ala	Phe	Ile	Ala	Ala	Glu	Leu	Leu	Thr	Ser	Ser	Leu	Tyr
305					310					315					320
Glu	Glu	Thr	Leu	Gly	Cys	Ser	Ser	Gln	Asp	Pro	Asn	Leu	Ser	Glu	Ile
				325					330					335	
His	Lys	Lys	His	Phe	Lys	Glu	Tyr	Ile	Leu	Asn	Gly	Glu	Glu	Tyr	Arg
			340					345					350		
Leu	Asn	Pro	Gln	Leu	Lys	Asp	Tyr	Asp	Leu	Asp	Ala	Leu	Ser	Glu	Val
		355					360					365			
Leu	Asp	Leu	Ser	Arg	Asp	Gln	Gln	Phe	Ser	Tyr	Met	Gly	Val	Gln	Asn
	370					375					380				
Leu	Tyr	Asp	Arg	Tyr	Phe	Asn	Leu	His	Glu	Gly	Arg	Arg	Leu	Glu	Thr
385					390					395					400
Ala	Gln	Ile	Phe	Trp	Met	Arg	Val	Ser	Met	Gly	Leu	Ala	Leu	Asn	Glu
				405					410					415	
Gly	Glu	Gln	Lys	Asn	Phe	Trp	Ala	Ile	Thr	Phe	Tyr	Asn	Leu	Leu	Ser
			420					425					430		
Thr	Phe	Arg	Tyr	Thr	Pro	Ala	Thr	Pro	Thr	Leu	Phe	Asn	Ser	Gly	Met

Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg
545					550					555					560
Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys
				565					570						575
Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val
			580					585					590		
Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	Leu	Tyr	Glu
		595					600					605			
Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	Tyr	Lys	Lys
610						615					620				
Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	Leu	Tyr	Glu
625					630					635					640
Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser
				645					650						655
Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu
			660					665					670		
Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly
		675					680					685			
Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	Asp	Glu	Glu
		690				695					700				
Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	Asp	Asn	Val
705					710					715					720
Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	Ala	Asn	Leu
				725					730						735
Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	Asp	Val	Leu
			740					745					750		
Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	Glu	Phe	Ser
		755					760					765			
Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	Ala	Ser	Ser
		770				775				780					
Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	Gly	Ser	Lys
785					790					795					800
Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	Leu	Lys	Glu
				805					810					815	
Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	Lys	Lys	Asp
			820					825					830		
Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	Arg	Asn	Ser
		835					840					845			
Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly
		850				855					860				
Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	Val	Lys	Ser
865					870					875					880
Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile	Pro	Asn	Thr	Tyr	Leu	Ile	Lys	Lys
				885					890					895	
Leu	Lys	Glu	Leu	Gly	Leu	Trp	Asp	Ala	Glu	Met	Leu	Asp	Asp	Leu	Lys
		900						905				910			
Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu	Ile	Glu	Arg	Ile	Pro	Asn	His	Leu
		915					920					925			
Lys	Lys	Leu	Phe	Leu	Thr	Ala	Phe	Glu	Ile	Glu	Pro	Glu	Trp	Ile	Ile
		930				935					940				
Glu	Cys	Thr	Ser	Arg	Arg	Gln	Lys	Trp	Ile	Asp	Met	Gly	Val	Ser	Leu
945					950					955					960
Asn	Leu	Tyr	Leu	Ala	Glu	Pro	Asp	Gly	Lys	Lys	Leu	Ser	Asn	Met	Tyr
				965					970					975	
Leu	Thr	Ala	Trp	Lys	Lys	Gly	Leu	Lys	Thr	Thr	Tyr	Tyr	Leu	Arg	Ser
			980					985					990		
Gln	Ala	Ala	Thr	Ser	Val	Glu	Lys	Ser	Phe	Ile	Asp	Ile	Asn	Lys	Arg

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<210> 514
<211> 346
<212> PRT
<213> Chlamydia pneumoniae
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<400>	514														
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Lys	Lys	Gly	Leu 20	Val	Asn	Cys	Asn	Gln 25	Val	Asp	Val	Asn	Gln 30	Leu	Val
Pro	Ile	Lys 35	Tyr	Lys	Trp	Ala	Trp 40	Glu	His	Tyr	Leu	Asn 45	Gly	Cys	Ala
Asn	Asn 50	Trp	Leu	Pro	Thr	Glu 55	Val	Pro	Met	Ala	Arg 60	Asp	Ile	Glu	Leu
Trp 65	Lys	Ser	Asp	Glu	Leu 70	Ser	Glu	Asp	Glu	Arg 75	Arg	Val	Ile	Leu 80	Leu
Asn	Leu	Gly	Phe 85	Ser	Thr	Ala	Glu	Ser 90	Leu	Val	Gly	Asn 95	Asn	Ile	
Val	Leu	Ala	Ile 100	Phe	Lys	His	Ile	Thr 105	Asn	Pro	Glu	Ala	Arg 110	Gln	Tyr
Leu	Leu	Arg 115	Gln	Ala	Phe	Glu	Glu 120	Ala	Val	His	Thr	His 125	Thr	Phe	Leu
Tyr	Ile 130	Cys	Glu	Ser	Leu	Gly 135	Leu	Asp	Glu	Gly	Glu 140	Val	Phe	Asn	Ala
Tyr 145	Asn	Glu	Arg	Ala	Ser 150	Ile	Arg	Ala	Lys	Asp 155	Asp	Phe	Gln	Met	Thr 160
Leu	Thr	Val	Asp	Val 165	Leu	Asp	Pro	Asn	Phe 170	Ser	Val	Gln	Ser	Ser 175	Glu
Gly	Leu	Gly	Gln 180	Phe	Ile	Lys	Asn	Leu 185	Val	Gly	Tyr	Tyr	Ile 190	Ile	Met
Glu	Gly	Ile 195	Phe	Phe	Tyr	Ser	Gly 200	Phe	Val	Met	Ile	Leu 205	Ser	Phe	His
Arg	Gln 210	Asn	Lys	Met	Thr	Gly 215	Ile	Gly	Glu	Gln	Tyr 220	Gln	Tyr	Ile	Leu
Arg 225	Asp	Glu	Thr	Ile	His 230	Leu	Asn	Phe	Gly	Ile 235	Asp	Leu	Ile	Asn	Gly 240
Ile	Lys	Glu	Glu	Asn 245	Pro	Glu	Val	Trp	Thr 250	Thr	Glu	Leu	Gln	Glu 255	Glu
Ile	Val	Ala	Leu 260	Ile	Glu	Lys	Ala	Val 265	Glu	Leu	Glu	Ile	Glu 270	Tyr	Ala
Lys	Asp	Cys 275	Leu	Pro	Arg	Gly	Ile 280	Leu	Gly	Leu	Arg	Ser 285	Ser	Met	Phe
Ile	Asp 290	Tyr	Val	Arg	His	Ile 295	Ala	Asp	Arg	Arg	Leu	Glu	Arg	Ile	Gly
Leu 305	Lys	Pro	Ile	Tyr	His 310	Ser	Arg	Asn	Pro	Phe 315	Pro	Trp	Met	Ser	Glu
Thr	Met	Asp	Leu	Asn 325	Lys	Glu	Lys	Asn	Phe 330	Glu	Thr	Arg	Val	Thr 335	Thr
Glu	Tyr	Gln	Thr	Ala	Gly	Asn	Leu	Ser	Trp						

345

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Cys	Phe	Val	Ala 20	Cys	Gly	Ile	Thr	Phe 25	Gly	Cys	Thr	Asn 30	Ser	Gly	Phe
Gln	Asn	Ala 35	Asn	Ser	Arg	Pro	Cys 40	Ile	Leu	Ser	Met	Asn 45	Arg	Met	Ile
His	Asp 50	Cys	Val	Glu	Arg	Val 55	Gly	Asn	Arg	Leu 60	Ala	Thr	Ala	Val	
Leu 65	Ile	Lys	Gly	Ser	Leu 70	Asp	Pro	His	Ala	Tyr 75	Glu	Met	Val	Lys	Gly 80
Asp	Lys	Asp	Lys	Ile 85	Ala	Gly	Ser	Ala	Val 90	Ile	Phe	Cys	Asn 95	Gly	Leu
Gly	Leu	Glu	His 100	Thr	Leu	Ser	Leu	Arg 105	Lys	His	Leu	Glu	Asn 110	Asn	Pro
Asn	Ser	Val 115	Lys	Leu	Gly	Glu	Arg 120	Leu	Ile	Ala	Arg	Gly 125	Ala	Phe	Val
Pro	Leu 130	Glu	Glu	Asp	Gly	Ile 135	Cys	Asp	Pro	His	Ile 140	Trp	Met	Asp	Leu
Ser 145	Ile	Trp	Lys	Glu	Ala 150	Val	Ile	Glu	Ile	Thr 155	Glu	Val	Leu	Ile	Glu 160
Lys	Phe	Pro	Glu	Trp 165	Ser	Ala	Glu	Phe	Lys 170	Ala	Asn	Ser	Glu	Glu 175	Leu
Val	Cys	Glu	Met 180	Ser	Ile	Leu	Asp	Ser 185	Trp	Ala	Lys	Gln	Cys 190	Leu	Ser
Thr	Ile	Pro 195	Glu	Asn	Leu	Arg	Tyr 200	Leu	Val	Ser	Gly	His 205	Asn	Ala	Phe
Ser	Tyr 210	Phe	Thr	Arg	Arg	Tyr 215	Leu	Ala	Thr	Pro	Glu 220	Glu	Val	Ala	Ser
Gly 225	Ala	Trp	Arg	Ser	Arg 230	Cys	Ile	Ser	Pro	Glu 235	Gly	Leu	Ser	Pro	Glu 240
Ala	Gln	Ile	Ser	Val 245	Arg	Asp	Ile	Met	Ala 250	Val	Val	Asp	Tyr	Ile 255	Asn
Glu	His	Asp	Val 260	Ser	Val	Val	Phe	Pro 265	Glu	Asp	Thr	Leu	Asn 270	Gln	Asp
Ala	Leu	Lys 275	Lys	Ile	Val	Ser	Ser 280	Leu	Lys	Lys	Ser	His 285	Leu	Val	Arg
Leu	Ala 290	Gln	Lys	Pro	Leu	Tyr 295	Ser	Asp	Asn	Val	Asp 300	Asp	Asn	Tyr	Phe
Ser 305	Thr	Phe	Lys	His	Asn 310	Val	Cys	Leu	Ile	Thr 315	Glu	Glu	Leu	Gly	Gly 320
Val	Ala	Leu	Glu	Cys 325	Gln	Arg									

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<212> PRT
<213> Chlamydia pneumoniae
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<400> 516

<211> 526
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 <213> Chlamydia pneumoniae

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			20					25					30		
Ser	Ile	His	Thr	Lys	Asn	Ser	Cys	Gly	Ile	Gly	Glu	Phe	Leu	Asp	Leu
		35					40					45			
Ile	Pro	Leu	Ile	Ser	Trp	Cys	Gln	Lys	Gln	Gly	Phe	Ser	Val	Ile	Gln
	50					55					60				
Leu	Leu	Pro	Leu	Asn	Asp	Thr	Gly	Glu	Asp	Thr	Ser	Pro	Tyr	Asn	Ser
65					70					75					80
Ile	Ser	Ser	Val	Ala	Leu	Asn	Pro	Leu	Phe	Leu	Ser	Leu	Ser	Ser	Leu
				85					90					95	
Pro	Asn	Ile	Asp	Thr	Ile	Pro	Glu	Val	Ala	Lys	Lys	Leu	Gln	Asp	Met
			100					105					110		
His	Glu	Leu	Cys	Ser	Thr	Pro	Ser	Val	Ser	Tyr	Thr	Gln	Val	Lys	Glu
	115						120					125			
Lys	Lys	Trp	Ala	Phe	Leu	Arg	Glu	Tyr	Tyr	Gln	Lys	Cys	Cys	Lys	Ser
	130					135					140				
Ser	Leu	Glu	Gly	Asn	Ser	Asn	Phe	Ser	Glu	Phe	Leu	Glu	Ser	Glu	Arg
145					150					155					160
Tyr	Trp	Leu	Tyr	Pro	Tyr	Gly	Thr	Phe	Arg	Ala	Ile	Lys	His	His	Met
				165					170					175	
His	Gly	Glu	Pro	Ile	Asn	Asn	Trp	Pro	Lys	Ser	Leu	Thr	Asp	Gln	Glu
			180					185					190		
Asn	Phe	Pro	Asp	Leu	Thr	Lys	Lys	Phe	His	Asp	Glu	Val	Leu	Phe	Phe
	195						200					205			
Ser	Tyr	Leu	Gln	Phe	Leu	Cys	Tyr	Gln	Gln	Leu	Cys	Glu	Val	Lys	Ala
	210					215					220				
Tyr	Ala	Asp	Gln	His	His	Val	Leu	Leu	Lys	Gly	Asp	Leu	Pro	Ile	Leu
225					230					235					240
Ile	Ser	Lys	Asp	Ser	Cys	Asp	Val	Trp	Tyr	Phe	Arg	Asp	Tyr	Phe	Ser
				245					250					255	
Ser	Ser	Arg	Ser	Val	Gly	Ala	Pro	Pro	Asp	Leu	Tyr	Asn	Ser	Glu	Gly
			260					265					270		
Gln	Asn	Trp	His	Leu	Pro	Ile	Tyr	Asn	Phe	Ser	Gln	Leu	Ala	Lys	Asp
	275						280					285			
Asp	Tyr	Ile	Trp	Trp	Lys	Glu	Arg	Leu	Arg	Tyr	Ala	Gln	Asn	Phe	Tyr
	290					295					300				
Ser	Val	Tyr	Arg	Leu	Asp	His	Ile	Ile	Gly	Phe	Phe	Arg	Leu	Trp	Ile
305					310					315					320
Trp	Asp	Ser	Ser	Gly	Arg	Gly	Arg	Phe	Ile	Pro	Asp	Asn	Pro	Lys	Asp
				325					330					335	
Tyr	Ile	Lys	Gln	Gly	Thr	Glu	Ile	Leu	Ser	Thr	Met	Leu	Gly	Ala	Ser
			340					345					350		
Ser	Met	Leu	Pro	Ile	Gly	Glu	Asp	Leu	Gly	Ile	Ile	Pro	Gln	Asp	Val
	355						360					365			
Lys	Thr	Thr	Leu	Thr	His	Leu	Gly	Ile	Cys	Gly	Thr	Arg	Ile	Pro	Arg
	370					375					380				
Trp	Glu	Arg	Asn	Trp	Glu	Ser	Asp	Ser	Ala	Phe	Ile	Pro	Leu	Lys	Asp
385					390					395					400
Tyr	Asn	Pro	Leu	Ser	Val	Thr	Thr	Leu	Ser	Thr	His	Asp	Ser	Asp	Thr
				405					410					415	

098411301

Phe Ala Gln Trp Trp Leu Asn Ser Pro Lys Glu Ala Lys Gln Phe Ala
 420 425 430
 Lys Phe Leu His Leu Pro Phe Gln Lys Thr Leu Thr Thr Glu Thr Gln
 435 440 445
 Ile Asp Ile Leu Lys Leu Ser His Glu Ser Ala Ser Ile Phe His Ile
 450 455 460
 Asn Leu Phe Asn Asp Tyr Leu Ala Leu Cys Pro Asp Leu Val Ser Lys
 465 470 475 480
 Asn Leu Gln Arg Glu Arg Ile Asn Thr Pro Gly Thr Ile Ser Lys Lys
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 <213> Chlamydia pneumoniae

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 Ser Asp Thr His Val Pro Val Gln Ile Glu Glu Asp Gly Asn Ser Gly
 35 40 45
 Asp Leu Ala Val Ser Thr Leu Leu Gly Thr Leu Pro Glu Asn Val Phe
 50 55 60
 Arg Glu Arg Ile Phe Lys Ala Ala Leu Ser Val Asn Gly Ser Phe Gln
 65 70 75 80
 Ser Ser Ile Lys Gly Ile Leu Gly Tyr Gly Glu Val Thr Gln Gln Leu
 85 90 95
 Tyr Leu Ser Asp Ile Leu Ser Met Asn Tyr Leu Asn Gly Glu Lys Leu
 100 105 110
 Phe Glu Tyr Leu Lys Leu Phe Ser Leu His Ala Lys Ile Trp Met Glu
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 Tyr Val Ala
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 Leu Asp Gln Tyr Arg Thr Ile Val Ser Ala Ile Ser Thr Ala Leu Lys
 35 40 45
 Glu Asn Ala Ala Phe Lys Ala Asn Thr Leu Thr Gln Ile Val Pro Leu
 50 55 60
 Asn Val Asp Val Leu Ser Leu Phe Ser Asp Val Leu Asp Leu Asp Ala

65					70					75					80
Gly	Ile	Pro	Glu	Thr	Pro	Asn	Val	Leu	Leu	Ser	Asn	Glu	Met	Gln	Lys
				85					90					95	
Val	Phe	Gln	Gly	Ile	Tyr	Asn	Glu	Ile	Ser	Leu	Ile	Lys	Val	Phe	Pro
			100					105					110		
Asn	Gly	Asp	Lys	Ile	Val	Val	Ala	Ser	Ser	Ile	Pro	Glu	His	Leu	Gly
		115					120					125			
Glu	Asn	Tyr	Asn	His	Lys	Ile	Asp	Ile	Pro	Lys	Asn	Thr	Pro	Phe	Leu
	130					135					140				
Ala	Ala	Leu	Lys	Gln	Ser	Pro	Lys	Asn	Gln	Glu	Val	Phe	Ser	Val	Met
145					150					155					160
Gln	Ala	Asn	Val	Phe	Asp	Ala	Lys	Thr	Gln	Glu	Leu	Gln	Gly	Ile	Leu
			165					170						175	
Tyr	Thr	Thr	Phe	Ser	Ala	Glu	Ser	Leu	Leu	Lys	Asp	Leu	Leu	Ile	Asn
		180						185					190		
Lys	Gln	Ser	Tyr	Leu	Thr	Val	Lys	Thr	Ala	Ile	Leu	Ser	Lys	Tyr	Gly
	195					200						205			
Val	Ile	Leu	Lys	Ala	Ser	Asp	Pro	Ala	Leu	His	Leu	His	Thr	Val	Tyr
	210					215					220				
Pro	Asp	Met	Thr	Lys	Glu	Lys	Phe	Cys	Gln	Val	Phe	Leu	Asn	Asp	Asp
225					230					235					240
Pro	Cys	Pro	Ile	Asp	Ser	Glu	Leu	Gly	Pro	Leu	Thr	Leu	Ser	Pro	Leu
			245						250					255	
Asp	Ile	Gly	Glu	Asn	Phe	Tyr	Ser	Phe	Lys	Ile	Lys	Asp	Thr	Glu	Ile
		260						265					270		
Trp	Gly	Cys	Ile	Glu	Asn	Val	Pro	Ser	Ile	Asp	Ile	Ala	Val	Leu	Ser
	275					280						285			
Tyr	Ala	Lys	Lys	Glu	Glu	Ser	Phe	Ala	Pro	Leu	Trp	Arg	Arg	Ala	Arg
	290					295					300				
Met	Tyr	Thr	Ala	Tyr	Phe	Phe	Cys	Ile	Leu	Leu	Gly	Ser	Leu	Ile	Ala
305					310					315					320
Phe	Ile	Val	Ala	Arg	Arg	Leu	Ser	Leu	Pro	Ile	Arg	Lys	Leu	Ala	Thr
			325						330					335	
Ala	Met	Ile	Glu	Ser	Arg	Lys	Asn	Lys	Asn	Cys	Leu	Tyr	Thr	Asp	Asp
			340					345					350		
Ser	Leu	Gly	Phe	Glu	Ile	Asn	Arg	Leu	Gly	His	Ile	Phe	Asn	Ala	Met
		355				360						365			
Val	Glu	Asn	Leu	His	Lys	Gln	Gln	His	Leu	Ala	Lys	Thr	Asn	Phe	Glu
	370					375						380			
Met	Lys	Glu	Asn	Ala	Gln	Asn	Ala	Leu	His	Leu	Gly	Glu	Gln	Ala	Gln
385					390					395					400
Gln	Arg	Leu	Leu	Pro	Asn	Thr	Leu	Pro	Ser	Tyr	Pro	His	Ile	Glu	Leu
			405					410						415	
Ala	Lys	Ala	Tyr	Ile	Pro	Ala	Ile	Thr	Val	Gly	Gly	Asp	Phe	Phe	Asp
			420					425					430		
Val	Phe	Val	Val	Gly	Glu	Gly	Ser	Lys	Ala	Arg	Leu	Phe	Leu	Ile	Val
	435					440						445			
Ala	Asp	Ala	Ser	Gly	Lys	Gly	Val	Asn	Ala	Cys	Gly	Tyr	Ser	Leu	Phe
	450					455					460				
Leu	Lys	Asn	Met	Leu	Arg	Thr	Phe	Leu	Ser	Arg	Ser	Ser	Ser	Leu	Gln
465					470				475						480
Gln	Ala	Ile	Gln	Glu	Thr	Ser	Arg	Leu	Phe	Tyr	Asn	Asn	Thr	Lys	Asn
			485					490						495	
Ser	Gly	Met	Phe	Val	Thr	Leu	Cys	Val	Tyr	Cys	Tyr	His	Gln	Thr	Ser
		500						505					510		
Asn	Thr	Met	Glu	Tyr	Tyr	Ser	Cys	Gly	His	Pro	Pro	Ala	Cys	Tyr	Leu
		515					520					525			

0984132 042301

Asp Pro Asp Gly Glu Thr Ser Trp Leu Phe His Pro Gly Met Ala Leu
 530 535 540
 Gly Phe Leu Pro Glu Val Ala Asn Ile Thr Ser Lys Leu Phe His Pro
 545 550 555 560
 Lys Pro Gly Ser Leu Phe Val Leu Tyr Ser Asp Gly Ile Thr Glu Ala
 565 570 575
 His Asn Asn Asn Asn Asp Met Phe Gly Glu Glu Arg Leu Gln Ala Ala
 580 585 590
 Ile Gln Gly Leu Thr Gly Lys Ser Ala Ala Asp Ala Val His Arg Leu
 595 600 605
 Met Leu Ser Val Lys Thr Phe Val Gly Asn Ser His Gln His Asp Asp
 610 615 620
 Ile Thr Leu Leu Ile Leu Lys Val Leu Glu Ser
 625 630 635

<210> 521

<211> 314

<212> PRT

<213> Chlamydia pneumoniae

<400> 521

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 Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu Glu Val Leu
 35 40 45
 Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu Tyr Gln Gln
 50 55 60
 Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe Gly Asn Ser
 65 70 75 80
 Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser Thr Ala Phe
 85 90 95
 Pro Ile Ser Ala Ile Leu Gly Leu Gln Ser Leu Phe Leu Ser Ile Gly
 100 105 110
 Gly Gly Ile Ala Leu Gly Thr Ile Ala Ala Leu Lys Lys Lys Lys Gln
 115 120 125
 Arg Arg Tyr Ile Leu Gly Ala Ser Ile Leu Gln Ile Ser Ile Pro Ala
 130 135 140
 Phe Ile Phe Ala Thr Leu Leu Gln Tyr Val Phe Ala Val Lys Ile Pro
 145 150 155 160
 Leu Leu Pro Ile Ala Cys Trp Gly Ser Phe Thr His Thr Ile Leu Pro
 165 170 175
 Thr Leu Ala Leu Ala Val Thr Pro Met Ala Phe Ile Ile Gln Leu Thr
 180 185 190
 Tyr Ser Ser Val Ser Ala Ala Leu Asn Lys Asp Tyr Val Leu Leu Ala
 195 200 205
 Tyr Ala Lys Gly Leu Ser Pro Thr Ile Ser Tyr Ser Ala Phe Leu Thr Thr
 210 215 220 240
 Pro Tyr Ala Ile Phe Pro Thr Ile Ser Tyr Ser Ala Phe Leu Thr Thr
 225 230 235 240
 Thr Val Ile Thr Gly Thr Phe Ala Ile Glu Asn Ile Phe Cys Ile Pro
 245 250 255
 Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg Asp Tyr Pro
 260 265 270
 Val Ala Leu Gly Leu Ser Val Phe Tyr Gly Thr Leu Phe Met Leu Ser
 275 280 285

05041321 042301

Asp	Ile	Val	Lys	Glu	Arg	Met	Asp	Met	Glu	Met	Ala	Ile	Ile	Ile	Pro
370						375					380				
Lys	Gly	Met	Cys	Asp	Tyr	Leu	Leu	Ile	Val	Trp	Asp	Ile	Ile	His	Trp
385					390					395					400
Ala	Lys	Ala	Asn	Gly	Ile	Pro	Val	Gly	Pro	Gly	Arg	Gly	Ser	Gly	Ala
			405						410					415	
Gly	Ser	Val	Leu	Leu	Phe	Leu	Leu	Gly	Ile	Thr	Glu	Ile	Glu	Pro	Ile
		420						425					430		
Arg	Phe	Asp	Leu	Phe	Phe	Glu	Arg	Phe	Ile	Asn	Pro	Glu	Arg	Leu	Ser
		435					440					445			
Tyr	Pro	Asp	Ile	Asp	Ile	Asp	Ile	Cys	Met	Ala	Gly	Arg	Glu	Arg	Val
	450				455					460					
Ile	Asn	Tyr	Ala	Ile	Glu	Arg	His	Gly	Lys	Asp	Asn	Val	Ala	Gln	Ile
465					470					475					480
Ile	Thr	Phe	Gly	Thr	Met	Lys	Ala	Lys	Met	Ala	Val	Lys	Asp	Val	Gly
			485						490					495	
Arg	Thr	Leu	Asp	Met	Ala	Leu	Ser	Lys	Val	Asn	His	Ile	Ala	Lys	His
		500						505					510		
Ile	Pro	Asp	Leu	Asn	Thr	Thr	Leu	Ser	Lys	Ala	Leu	Glu	Thr	Asp	Pro
		515					520					525			
Asp	Leu	His	Gln	Leu	Tyr	Ile	Asn	Asp	Ala	Glu	Ser	Ala	Gln	Val	Ile
	530					535				540					
Asp	Met	Ala	Leu	Cys	Leu	Glu	Gly	Ser	Ile	Arg	Asn	Thr	Gly	Val	His
545					550					555					560
Ala	Ala	Gly	Val	Ile	Ile	Cys	Gly	Asp	Gln	Leu	Thr	Asn	His	Ile	Pro
			565						570					575	
Ile	Cys	Ile	Ser	Lys	Asp	Ser	Thr	Met	Ile	Thr	Thr	Gln	Tyr	Ser	Met
			580					585					590		
Lys	Pro	Val	Glu	Ser	Val	Gly	Met	Leu	Lys	Val	Asp	Leu	Leu	Gly	Leu
		595					600					605			
Lys	Thr	Leu	Thr	Ser	Ile	Asn	Ile	Ala	Met	Ser	Ala	Ile	Glu	Lys	Lys
	610					615					620				
Thr	Gly	Gln	Ser	Leu	Ala	Met	Ala	Thr	Leu	Pro	Leu	Asp	Asp	Ala	Thr
625					630					635					640
Thr	Phe	Ser	Leu	Leu	His	Gln	Gly	Lys	Thr	Met	Gly	Ile	Phe	Gln	Met
			645						650					655	
Glu	Ser	Lys	Gly	Met	Gln	Glu	Leu	Ala	Lys	Asn	Leu	Arg	Pro	Asp	Leu
			660					665					670		
Phe	Glu	Glu	Ile	Ile	Ala	Met	Gly	Ala	Leu	Tyr	Arg	Pro	Gly	Pro	Met
		675					680					685			
Asp	Met	Ile	Pro	Ser	Phe	Ile	Asn	Arg	Lys	His	Gly	Lys	Glu	Ile	Ile
	690					695					700				
Glu	Tyr	Asp	His	Pro	Leu	Met	Glu	Ser	Ile	Leu	Lys	Glu	Thr	Tyr	Gly
705					710					715					720
Ile	Met	Val	Tyr	Gln	Glu	Gln	Val	Met	Gln	Ile	Ala	Gly	Ala	Leu	Ala
			725						730					735	
Ser	Tyr	Ser	Leu	Gly	Glu	Gly	Asp	Val	Leu	Arg	Arg	Ala	Met	Gly	Lys
		740						745					750		
Lys	Asp	Phe	Gln	Gln	Met	Glu	Gln	Arg	Glu	Lys	Phe	Cys	Lys	Arg	
		755					760				765				
Ala	Cys	Asn	Asn	Gly	Ile	Asp	Pro	Glu	Leu	Ala	Thr	Val	Ile	Phe	Asp
	770					775					780				
Lys	Met	Glu	Lys	Phe	Ala	Ala	Tyr	Gly	Phe	Asn	Lys	Ser	His	Ala	Ala
785					790					795					800
Ala	Tyr	Gly	Leu	Ile	Thr	Tyr	Thr	Thr	Ala	Tyr	Leu	Lys	Ala	Asn	Tyr
			805						810					815	
Pro	Lys	Glu	Trp	Leu	Ala	Ala	Leu	Leu	Thr	Cys	Asp	Ser	Asp	Asp	Ile

090413E 0430L

820 825 830
 Glu Lys Ile Gly Lys Leu Ile Arg Glu Ala Gln Ser Met Gly Ile Pro
 835 840 845
 Ile Leu Pro Pro His Ile Asn Val Ser Ser Asn His Phe Val Ala Thr
 850 855 860
 Asp Glu Gly Ile Arg Phe Ala Met Gly Ala Ile Lys Gly Ile Gly Arg
 865 870 875 880
 Gly Leu Ile Glu Ser Ile Val Glu Glu Arg Asp His His Gly Pro Tyr
 885 890 895
 Glu Ser Ile Arg Asp Phe Ile Gln Arg Ser Asp Leu Lys Lys Val Ser
 900 905 910
 Lys Lys Ser Ile Glu Ser Leu Ile Asp Ala Gly Cys Phe Asp Cys Phe
 915 920 925
 Asp Ser Asn Arg Asp Leu Leu Leu Ala Ser Val Glu Pro Leu Tyr Glu
 930 935 940
 Ala Ile Ala Lys Asp Lys Lys Glu Ala Ala Ser Gly Val Met Thr Phe
 945 950 955 960
 Phe Thr Leu Gly Ala Met Asp Arg Lys Asn Glu Val Pro Ile Cys Leu
 965 970 975
 Pro Lys Asp Ile Pro Thr Arg Ser Lys Lys Glu Leu Leu Lys Lys Glu
 980 985 990
 Lys Glu Leu Leu Gly Ile Tyr Leu Thr Glu His Pro Met Asp Thr Val
 995 1000 1005
 Arg Asp His Leu Ser Arg Leu Ser Val Val Leu Ala Gly Glu Phe Glu
 1010 1015 1020
 Asn Leu Pro His Gly Ser Val Val Arg Thr Val Phe Ile Ile Asp Lys
 1025 1030 1035 1040
 Val Thr Thr Lys Ile Ser Ser Lys Ala Gln Lys Lys Phe Ala Val Leu
 1045 1050 1055
 Arg Val Ser Asp Gly Ile Asp Ser Tyr Glu Leu Pro Ile Trp Pro Asp
 1060 1065 1070
 Met Tyr Glu Glu Gln Gln Glu Leu Glu Glu Asp Arg Leu Ile Tyr
 1075 1080 1085
 Ala Ile Leu Val Leu Asp Lys Arg Ser Asp Ser Leu Arg Ile Ser Cys
 1090 1095 1100
 Arg Trp Met Lys Asp Leu Ser Ile Val Asn Glu Asn Ile Ile Tyr Glu
 1105 1110 1115 1120
 Cys Asp Gln Ala Phe Asp Arg Ile Lys Asn Gln Val Gln Lys Met Ser
 1125 1130 1135
 Phe Thr Met Ser Thr Ser Gly Lys Glu Thr Lys Ala Lys Gly Asn Lys
 1140 1145 1150
 Pro Asn Glu Asn Gly His Thr Gln Ala Leu Ala Pro Val Thr Leu Ser
 1155 1160 1165
 Leu Asp Leu Asn Glu Leu Arg His Ser His Leu Cys Ile Leu Lys Lys
 1170 1175 1180
 Ile Val Gln Lys His Pro Gly Ser Arg Thr Leu Val Leu Val Phe Thr
 1185 1190 1195 1200
 Gln Asp Asn Glu Arg Val Ala Ser Met Ser Pro Asp Asp Ala Tyr Phe
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 Leu Pro Val Arg Val Ile Thr Val
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<210> 523

<211> 576

<212> PRT

PDBE240 "2E4B5D"

<400> 523

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Leu	Gln	Ile 35	Thr	Ala	Val	Val	Leu 40	Gly	Ile	Ile	Ala 45	Leu	Leu	Ser	Gly
Ile	Val 50	Leu	Ile	Ile	Gly	Thr 55	Pro	Leu	Gly	Ala 60	Pro	Ile	Ser	Met	Ile
Leu 65	Gly	Gly	Cys	Leu 70	Leu	Ala	Ser	Gly	Gly	Ala 75	Leu	Phe	Val	Gly	Gly 80
Thr	Ile	Ala	Thr	Ile 85	Leu	Gln	Ala	Arg	Asn 90	Ser	Tyr	Lys	Lys	Ala 95	Val
Asn	Gln	Lys	Lys 100	Leu	Ser	Glu	Pro	Leu 105	Met	Glu	Arg	Pro	Glu	Leu	Lys
Ala	Leu	Asp 115	Tyr	Ser	Leu	Asp	Leu 120	Lys	Glu	Val	Trp	Asp 125	Leu	His	His
Ser	Val 130	Val	Lys	His	Leu	Lys 135	Lys	Leu	Asp	Leu 140	Asn	Leu	Ser	Lys	Thr
Gln 145	Arg	Glu	Val	Leu 150	Asn	Gln	Ile	Lys	Ile	Asp 155	Asp	Glu	Gly	Pro	Ser
Leu	Gly	Glu	Cys 165	Ala	Ala	Met	Ile	Ser	Glu 170	Asn	Tyr	Asp	Ala 175	Cys	Leu
Lys	Met	Leu	Ala 180	Tyr	Arg	Glu	Glu 185	Leu	Lys	Glu	Gln	Thr 190	Thr	Gln	Tyr
Gln	Glu 195	Thr	Arg	Phe	Asn	Gln	Asn 200	Leu	Thr	His	Arg	Asn 205	Lys	Val	Leu
Leu	Ser 210	Ile	Leu	Ser	Arg	Ile 215	Thr	Asp	Asn	Ile	Ser 220	Lys	Ala	Gly	Gly
Val 225	Phe	Ser	Leu	Lys	Phe 230	Ser	Thr	Leu	Ser	Ser 235	Arg	Met	Ser	Arg	Ile
His	Thr	Thr	Thr 245	Thr	Val	Ile	Leu	Ala 250	Leu	Ser	Ala	Val	Val	Ser 255	Val
Met	Val	Val	Ala 260	Ala	Leu	Ile	Pro	Gly 265	Gly	Ile	Leu	Ala 270	Leu	Pro	Ile
Leu	Leu 275	Ala	Val	Ala	Ile	Ser	Ala 280	Gly	Val	Ile	Val	Thr 285	Gly	Leu	Ser
Tyr	Leu 290	Val	Arg	Gln	Ile	Leu 295	Ser	Asn	Thr	Lys	Arg 300	Asn	Arg	Gln	Asp
Phe 305	Tyr	Lys	Asp	Phe 310	Val	Lys	Asn	Val	Asp	Ile 315	Glu	Leu	Leu	Asn	Gln
Thr	Val	Thr	Leu 325	Gln	Arg	Phe	Leu	Phe 330	Glu	Met	Leu	Lys	Gly	Val 335	Leu
Lys	Glu	Glu	Glu 340	Glu	Val	Ser	Leu	Glu 345	Gly	Gln	Asp	Trp	Tyr 350	Thr	Gln
Tyr	Ile 355	Thr	Asn	Ala	Pro	Ile	Glu 360	Lys	Arg	Leu	Ile 365	Glu	Glu	Ile	Arg
Val	Thr 370	Tyr	Lys	Glu	Ile	Asp 375	Ala	Gln	Thr	Lys	Lys 380	Met	Lys	Thr	Asp
Leu 385	Glu	Phe	Leu	Glu	Asn 390	Glu	Val	Arg	Ser	Gly 395	Arg	Leu	Ser	Val	Ala
Ser	Pro	Ser	Glu 405	Asp	Pro	Ser	Glu	Thr	Pro 410	Ile	Phe	Thr	Gln	Gly 415	Lys
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<211> 439
<212> PRT
<213> Chlamydia pneumoniae

<220>
<221> VARIANT
<222> (1)...(439)
<223> Xaa = Any Amino Acid
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Leu	Lys	Ala	Asn	Leu	Asn	Leu	Pro	Phe	Leu	Asp	Leu	Ser	Ser	Thr	Ser
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Gly	Thr	Val	Asn	Leu	Asp	Asp	Phe	Asn	Pro	Ile	Pro	Ser	Ser	Met	Ala
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Gly	Ala	Gly	Gly	Lys	Val	Thr	Leu	Val	Ala	Glu	Trp	Gln	Ala	Leu	Gly
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Tyr	Thr	Pro	Lys	Pro	Glu	Leu	Arg	Ala	Thr	Leu	Val	Pro	Asn	Ser	Leu
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Trp	Asn	Ala	Tyr	Val	Asn	Ile	His	Ser	Ile	Gln	Gln	Glu	Ile	Ala	Thr
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Ala	Met	Ser	Asp	Ala	Pro	Ser	His	Pro	Gly	Ile	Trp	Ile	Gly	Gly	Ile
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Leu	Ile	Ser	Arg	Gly	Tyr	Ile	Val	Gly	Gly	Ser	Met	Thr	Thr	Pro	Gln
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Glu	Tyr	Thr	Phe	Ala	Val	Ala	Phe	Ser	Gln	Leu	Phe	Gly	Lys	Ser	Lys
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Asp	Tyr	Val	Val	Ser	Asp	Ile	Lys	Ser	Gln	Val	Tyr	Ala	Gly	Ser	Leu
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Cys	Ala	Gln	Ser	Ser	Tyr	Val	Ile	Pro	Leu	His	Ser	Ser	Leu	Arg	Arg

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Val Leu His Gly Gln Val Ser Tyr Gly Arg Asn His His Asn Met Thr		
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Thr Lys Leu Ala Asn Asn Thr Gln Gly Lys Ser Asp Trp Asp Ser His		
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Ser Phe Ala Val Glu Val Gly Gly Ser Leu Pro Val Asp Leu Asn Tyr		
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Arg Tyr Leu Thr Ser Tyr Ser Pro Tyr Val Lys Leu Gln Val Val Ser		
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Val Asn Gln Lys Gly Phe Gln Glu Val Ala Ala Asp Pro Arg Ile Phe		
305	310	315
Asp Ala Ser His Leu Val Asn Val Ser Ile Pro Met Gly Leu Thr Phe		
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Lys His Glu Ser Ala Lys Pro Pro Ser Ala Leu Leu Leu Thr Leu Gly		
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Tyr Ala Val Asp Ala Tyr Arg Asp His Pro His Cys Leu Thr Ser Leu		
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Thr Asn Gly Thr Ser Trp Ser Thr Phe Ala Thr Asn Leu Ser Arg Gln		
	370	375
Ala Phe Phe Ala Glu Ala Ser Gly His Leu Lys Leu Leu His Gly Leu		
385	390	395
Asp Cys Phe Ala Ser Gly Ser Cys Glu Leu Arg Ser Ser Ser Arg Ser		
	405	410
Tyr Asn Ala Asn Cys Gly Thr Arg Tyr Ser Phe Xaa Xaa Xaa Xaa Xaa		
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Xaa Xaa Xaa Phe Xaa Xaa Xaa		430
	435	

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 <211> 867
 <212> DNA
 <213> C. Trachomatis D serovar

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tacgtggatg ttttcgctga aatctatcag gtccctgttt ctcgaggatc catgttttcg	180
gcagcgcacg cgcctcaaat tcacacctca atcatcgatt tttaaattagg ctctccagga	240
gcagctctta ccgtagatct gtgttctttc cttcccaatg ctacagcagc gatcatgttg	300
ggcatgtgtg gaggtttaag atcccactac caaataggag attattttgt ccctgttgct	360
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aattttgtcg tacaaaaaat gatcaccaat attctcgaag ccaaaaacct cccttaccat	480
ataggcatca cccacacgac taacattcgg ttttgggagt ttaataaaga gttccgtcga	540
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aaagatggaa ttaaaactaa ggaaagcagt tcggcagtc taaactctca caccaaagag	720
catatactaa caggcggtga ggtgtttgcc tctctacaag agaaatcagg cccaggaatc	780
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caaactgaag tttctggcgg ggatttc	867

<210> 526
 <211> 1182
 <212> DNA
 <213> C. Trachomatis D serovar

<400> 526

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<210> 527

<211> 1650

<212> DNA

<213> C. Trachomatis D serovar

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ttacaatctc	tttgacaga	ttcctttttt	gattactcgg	aagagaaatt	ttctctgaaa	1620
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 <212> DNA
 <213> C. Trachomatis D serovar

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 <211> 615
 <212> DNA
 <213> C. Trachomatis D serovar

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<210> 531

<211> 972

<212> DNA

<213> C. Trachomatis D serovar

<400> 531

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<210> 532

<211> 1938

<212> DNA

<213> C. Trachomatis D serovar

<400> 532

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<210> 533
 <211> 1242
 <212> DNA
 <213> C. Trachomatis D serovar

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 <211> 1212
 <212> DNA
 <213> C. Trachomatis D serovar

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<210> 535

<211> 1617

<212> DNA

<213> C. Trachomatis D serovar

<400> 535

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<210> 536

<211> 312

<212> DNA

<213> C. Trachomatis D serovar

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<210> 537
 <211> 1008
 <212> DNA
 <213> C. Trachomatis D serovar

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<210> 538
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 <212> DNA
 <213> C. Trachomatis D serovar

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<210> 541
 <211> 1062
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 <213> C. Trachomatis D serovar

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<210> 542
 <211> 1263
 <212> DNA
 <213> C. Trachomatis D serovar

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<210> 543
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 <212> DNA

<213> C. Trachomatis D serovar

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<210> 544

<211> 729

<212> DNA

<213> C. Trachomatis D serovar

<400> 544

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<210> 545

<211> 1149

<212> DNA

<213> C. Trachomatis D serovar

<400> 545

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<210> 548

<211> 1038

<212> DNA

<213> C. Trachomatis D serovar

<400> 548

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<210> 549

<211> 978

<212> DNA

<213> C. Trachomatis D serovar

<400> 549

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<210> 550

<211> 438

<212> DNA

<213> C. Trachomatis D serovar

<400> 550

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<210> 551

<211> 1581

<212> DNA

<213> C. Trachomatis D serovar

<400> 551

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<210> 552

<211> 1950

<212> DNA

<213> C. Trachomatis D serovar

<400> 552

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<210> 553

<211> 939

<212> DNA

<213> C. Trachomatis D serovar

<400> 553

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<211> 3711

<212> DNA

<213> C. Trachomatis D serovar

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<213> C. Trachomatis D serovar

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gctttggtac gagaagggtga ttctaagccc tgcgcgatta gttatggata ctcatcaggc 600
gttcctaatt tatgtagtct aagaaccagc attactaata caggattgac accaacaacg 660
tattcattac gtgtaggcgg tttagaaagc ggtgtggtat gggttaatgc ccttttcta 720
ggcaatgata ttttaggaat aacaaatact tctaattgtat cttttttgga agtaatacct 780
caaacaaacg ct 792

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<210> 558

<211> 306

<212> DNA

<213> C. Trachomatis D serovar

<400> 558

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atgcaaaaata aaagaaaagt gagggacgat tttattaaaa ttgttaaaga tgtgaaaaaa 60
gatttccccg aattagacct aaaaatacga gtaaacagg aaaaagtaac tttcttaaat 120
tctcccttag aactctacca taaagtgtc tactaattc taggactgct tcaacaaata 180
gaaaactctt taggattatt ccagactct cctgttcttg aaaaattaga ggataacagt 240
ttaaagctaa aaaaggcttt gattatgctt atcttgtcta gaaaagacat gttttccaag 300
gctgaa 306

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<210> 559

<211> 729

<212> DNA

<213> C. Trachomatis D serovar

<400> 559

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gtgggatgca acttggccca attttttaggg aaaaaagtgt tacttgctga cctagaccgg 60
caatccaatt tatcttctgg attgggggct agtgtcagaa ataaccaaaa aggcttgcac 120
gacatagtat acaaatcaaa cgatttaaaa tcaatcattt gcgaaacaaa aaaagatagt 180
gtggacctaa ttcttgcac atttttatcc gaacagttta gagaattgga tattcataga 240
ggacctagta acaacttaaa gttatttctg aatgagtact gcgctccttt ttatgacatc 300
tgcataatag aactccacc tagcctagga gggttaacga aagaagcttt tgttgcagga 360
gacaaattaa ttgcttgttt aactccagaa cctttttcta ttctagggtt acaaaagata 420
cgtgaattct taagtctcgg cggaaaacct gaagaagaac acattcttgg aatagctttg 480
tctttttggg atgatcgtaa ctgcactaac caaatgtata tagacattat cgagtctatt 540
tacaaaaaca agcttttttc aacaaaaatt cgctcgagata tttctctcag ccgttctctt 600
cttaagaagc attctgtagc taatgtctat ccaaattcta gggccgcaga agatattctg 660
aagttaacgc atgaaatagc aaatattttg catatcgaat atgaacgaga ttactctcag 720
aggacaacg 729

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<210> 560

<211> 289

<212> PRT

<213> C. Trachomatis D serovar

<400> 560

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Met Thr His Gln His Lys Lys Ile Ser Glu Glu Thr Ile Ala Cys Asp
 1             5             10             15
Met Leu Glu Arg Tyr Thr Gly Ser Thr Val Gln Glu Phe Gln Pro Tyr
             20             25             30
Leu Leu Leu Thr Asn Phe Ala Tyr Tyr Val Asp Val Phe Ala Glu Ile
             35             40             45
Tyr Gln Val Pro Val Ser Arg Gly Ser Met Phe Ser Ala Ala His Ala

```

50 55 60
 Pro Gln Ile His Thr Ser Ile Ile Asp Phe Lys Leu Gly Ser Pro Gly
 65 70 75 80
 Ala Ala Leu Thr Val Asp Leu Cys Ser Phe Leu Pro Asn Ala Thr Ala
 85 90 95
 Ala Ile Met Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Ile
 100 105 110
 Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Lys Asp Gly Thr Ser
 115 120 125
 Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val
 130 135 140
 Gln Lys Met Ile Thr Asn Ile Leu Glu Ala Lys Asn Leu Pro Tyr His
 145 150 155 160
 Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys
 165 170 175
 Glu Phe Arg Arg Lys Leu Tyr Glu Asn Lys Ala Gln Thr Val Glu Met
 180 185 190
 Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Leu
 195 200 205
 Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Asp Gly Ile
 210 215 220
 Lys Thr Lys Glu Ser Ser Ser Ala Val Leu Asn Ser His Thr Lys Glu
 225 230 235 240
 His Ile Leu Thr Gly Val Glu Val Phe Ala Ser Leu Gln Glu Lys Ser
 245 250 255
 Gly Pro Gly Ile Lys Lys Thr Lys Gly Leu Pro His Met Glu Phe Gly
 260 265 270
 Gln Ala Asp Asp Ser Leu Ser Glu Gln Thr Glu Val Ser Gly Gly Asp
 275 280 285
 Phe

<210> 561
 <211> 394
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 561
 Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 1 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Asp Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Ala Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Ile Asp Met Ile Ser Glu Glu
 130 135 140
 Asp Ala Glu Leu Val Asp Leu Val Glu Met Glu Leu Val Glu Leu Leu

145 150 155 160
 Cys Gly Ala Asp Tyr Glu Ala Arg Asp Leu Lys Glu Pro Arg Ser Lys
 165 170 175
 Leu Thr Gly Ala Ala Leu Ser Leu Arg Asp Thr Glu His Ala Tyr Leu
 180 185 190
 His Leu Glu Arg Met Lys Glu Asp Leu Leu Ala Phe Val Gln Gly Ile
 195 200 205
 Tyr Leu Arg Pro His Met Arg Asn Phe Val Thr Asp Tyr Ile Glu His
 210 215 220
 Leu Arg Pro Arg Ala Val Thr Arg Asp Leu Ser Trp Gly Ile Pro Val
 225 230 235 240
 Pro Asp Leu Glu Asn Lys Val Phe Tyr Val Trp Phe Asp Ala Pro Ile
 245 250 255
 Gly Tyr Ile Ser Gly Thr Met Asp Trp Ala Ala Ser Ile Gly Asp Pro
 260 265 270
 Glu Ala Trp Lys Lys Phe Trp Leu Asp Asp Thr Val Thr Tyr Ala Gln
 275 280 285
 Phe Ile Gly Lys Asp Asn Thr Ser Phe His Ala Ala Ile Phe Pro Ala
 290 295 300
 Met Glu Ile Gly Gln Ser Leu Pro Tyr Lys Lys Val Asp Ala Leu Val
 305 310 315 320
 Thr Ser Glu Phe Leu Leu Leu Glu Gly Phe Gln Phe Ser Lys Ser Asp
 325 330 335
 Gly Asn Phe Ile Asp Met Asp Ala Phe Leu Glu Thr Tyr Ser Leu Asp
 340 345 350
 Lys Leu Arg Tyr Val Leu Ala Ala Ile Ala Pro Glu Thr Ser Asp Ser
 355 360 365
 Glu Phe Ser Phe Gln Glu Phe Lys Thr Arg Cys Asn Ser Glu Leu Val
 370 375 380
 Gly Lys Tyr Gly Asn Phe Val Asn Arg Val Leu Ala Phe Ala Val Lys
 385 390 395 400
 Asn Gly Cys Thr Glu Leu Ser Ser Pro Gln Leu Glu Gln Lys Asp Leu
 405 410 415
 Asp Phe Ile Ser Lys Ser Gln Lys Leu Ala Lys Asp Ala Ala Glu His
 420 425 430
 Tyr Ala Gln Tyr Ser Leu Arg Lys Ala Cys Ser Thr Ile Met Glu Leu
 435 440 445
 Ala Ala Leu Gly Asn Gly Tyr Phe Asn Asp Glu Ala Pro Trp Lys Leu
 450 455 460
 Ala Lys Glu Gly Asn Trp Asn Arg Val Arg Ala Ile Leu Phe Cys Ala
 465 470 475 480
 Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr Pro Ile Met Pro
 485 490 495
 Glu Thr Ala Leu Lys Ile Leu Glu Met Ile Ala Pro His Ser Leu Asp
 500 505 510
 Leu Gly Ser Gln Asp Pro Asp Arg Leu Gln Ser Leu Trp Thr Asp Ser
 515 520 525
 Phe Phe Asp Tyr Ser Glu Glu Lys Phe Ser Leu Lys Glu Pro Glu Leu
 530 535 540
 Leu Phe Thr Met Val Glu
 545 550

<210> 563

<211> 100

<212> PRT

<213> C. Trachomatis D serovar

His Ile Asp His Gly Lys Ser Thr Ile Ala Asp Arg Leu Leu Glu Ser
 20 25 30
 Thr Ser Thr Ile Glu Gln Arg Glu Met Arg Glu Gln Leu Leu Asp Ser
 35 40 45
 Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Lys Ala His Pro Val
 50 55 60
 Thr Met Thr Tyr Glu Tyr Glu Gly Glu Thr Tyr Glu Leu Asn Leu Ile
 65 70 75 80
 Asp Thr Pro Gly His Val Asp Phe Ser Tyr Glu Val Ser Arg Ser Leu
 85 90 95
 Ala Ala Cys Glu Gly Ala Leu Leu Ile Val Asp Ala Ala Gln Gly Val
 100 105 110
 Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu Ala Leu Glu Arg Asp Leu
 115 120 125
 Glu Ile Ile Pro Val Leu Asn Lys Ile Asp Leu Pro Ala Ala Gln Pro
 130 135 140
 Glu Ala Ile Lys Lys Gln Ile Glu Glu Phe Ile Gly Leu Asp Thr Ser
 145 150 155 160
 Asn Thr Ile Ala Cys Ser Ala Lys Thr Gly Gln Gly Ile Pro Glu Ile
 165 170 175
 Leu Glu Ser Ile Ile Arg Leu Val Pro Pro Pro Lys Pro Pro Gln Glu
 180 185 190
 Thr Glu Leu Lys Ala Leu Ile Phe Asp Ser His Tyr Asp Pro Tyr Val
 195 200 205
 Gly Ile Met Val Tyr Val Arg Val Ile Ser Gly Glu Ile Lys Lys Gly
 210 215 220
 Asp Arg Ile Thr Phe Met Ala Thr Lys Gly Ser Ser Phe Glu Val Leu
 225 230 235 240
 Gly Ile Gly Ala Phe Leu Pro Glu Ala Thr Leu Met Glu Gly Ser Leu
 245 250 255
 Arg Ala Gly Gln Val Gly Tyr Phe Ile Ala Asn Leu Lys Lys Val Lys
 260 265 270
 Asp Val Lys Ile Gly Asp Thr Val Thr Thr Val Lys His Pro Ala Lys
 275 280 285
 Glu Pro Leu Glu Gly Phe Lys Glu Ile Lys Pro Val Val Phe Ala Gly
 290 295 300
 Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr Leu Lys Asp Ala Leu
 305 310 315 320
 Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr Ile Glu Gln Glu Asn
 325 330 335
 Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly Phe Leu Gly Leu Leu
 340 345 350
 His Leu Glu Ile Ile Phe Glu Arg Ile Ser Arg Glu Phe Asp Leu Asp
 355 360 365
 Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys Val Val Leu Lys Asn
 370 375 380
 Gly Lys Thr Leu Phe Ile Asp Asn Pro Thr Ala Tyr Pro Asp Pro Ala
 385 390 395 400
 Leu Ile Glu His Met Glu Glu Pro Trp Val His Val Asn Ile Ile Thr
 405 410 415
 Pro Gln Glu Tyr Leu Ser Asn Ile Met Ser Leu Cys Met Asp Lys Arg
 420 425 430
 Gly Ile Cys Leu Lys Thr Asp Met Leu Asp Gln His Arg Leu Val Leu
 435 440 445
 Ser Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser Asp Phe Asn Asp Lys
 450 455 460
 Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe Asp Tyr Arg Leu Gly

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465 470 475 480
 Asp Tyr Lys Lys Gly Ala Ile Ile Lys Leu Glu Ile Leu Ile Asn Asp
 485 490 495
 Glu Ala Val Asp Ala Phe Ser Cys Leu Val His Arg Asp Lys Ala Glu
 500 505 510
 Ser Lys Gly Arg Ser Ile Cys Glu Lys Leu Val Asp Val Ile Pro Pro
 515 520 525
 Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala Ile Asn Lys Lys Ile Ile
 530 535 540
 Ala Arg Glu Thr Ile Arg Ala Leu Ala Lys Asn Val Thr Ala Lys Cys
 545 550 555 560
 Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu Trp Asp Lys Gln Lys
 565 570 575
 Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys Val Ser Ile Pro Asn
 580 585 590
 Thr Ala Phe Val Glu Val Leu Lys Met Glu
 595 600

<210> 566

<211> 324

<212> PRT

<213> C. Trachomatis D serovar

<400> 566

Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu Tyr Glu Lys Thr
 1 5 10 15
 Ile Ala Glu Phe Lys Glu Lys Asn Lys Glu Asn Ser Leu Leu Ser Ser
 20 25 30
 Ser Glu Ile Gln Lys Leu Asp Lys Arg Leu Asp Arg Leu Lys Glu Lys
 35 40 45
 Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln Ile Cys Arg His
 50 55 60
 Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly Met Cys Glu Glu
 65 70 75 80
 Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp Asp Pro Ala Val
 85 90 95
 Val Gly Gly Phe Ala Lys Ile Gln Gly Gln Arg Phe Met Leu Ile Gly
 100 105 110
 Gln Glu Lys Gly Cys Asp Thr Lys Ser Arg Met His Arg Asn Phe Gly
 115 120 125
 Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg Leu Ala Lys Met
 130 135 140
 Ala Glu Lys Phe Gly Leu Pro Ile Ile Phe Leu Val Asp Thr Pro Gly
 145 150 155 160
 Ala Phe Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln Gly Trp Ala Ile
 165 170 175
 Ala Thr Asn Leu Phe Glu Leu Ala Arg Leu Ala Thr Pro Ile Ile Val
 180 185 190
 Ile Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu Gly Met Ala Ile
 195 200 205
 Gly Asp Val Val Ala Met Leu Glu His Ser Tyr Tyr Ser Val Ile Ser
 210 215 220
 Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro Lys Lys Asn Ser
 225 230 235 240
 Asp Ala Ala Ala Met Leu Lys Met His Gly Glu Asp Leu Lys Gly Phe
 245 250 255
 Ala Ile Val Asp Ala Val Ile Lys Glu Pro Ile Gly Gly Ala His His

260 265 270
 Asn Pro Ala Ala Thr Tyr Arg Ser Val Gln Glu Tyr Val Leu Gln Glu
 275 280 285
 Trp Leu Lys Leu Lys Asp Leu Pro Val Glu Glu Leu Leu Glu Lys Arg
 290 295 300
 Tyr Gln Lys Phe Arg Thr Ile Gly Leu Tyr Glu Thr Ser Ser Glu Ser
 305 310 315 320
 Asp Ser Glu Ala

<210> 567

<211> 646

<212> PRT

<213> C. Trachomatis D serovar

<400> 567

Met Lys Leu Leu Leu Lys Ala Ile Leu Arg His Lys Lys His Leu Val
 1 5 10 15
 Leu Phe Gly Phe Ser Leu Leu Ser Ile Leu Gly Leu Thr Ile Thr Ser
 20 25 30
 Gln Ala Glu Ile Phe Ser Leu Gly Leu Ile Ala Lys Thr Gly Pro Asp
 35 40 45
 Thr Phe Leu Leu Phe Gly Lys Gln Glu Gly Ala Ser Leu Val Lys Arg
 50 55 60
 Lys Glu Leu Ser Lys Asp Gln Leu Leu Glu Gln Trp Asp Asn Ile Val
 65 70 75 80
 Gly Glu Gly Asp Thr Leu Ser Leu Pro Gln Ala Asn Ala Tyr Ile Ala
 85 90 95
 Lys His Ser Gly Gly Ser Gln Ser Ile Thr Lys Arg Leu Ser Ala Tyr
 100 105 110
 Leu Ser Gly Cys Phe Asp Phe Ser Arg Leu Gln Cys Leu Ala Leu Phe
 115 120 125
 Leu Val Val Val Ala Ile Leu Lys Ser Thr Thr Leu Phe Phe Gln Arg
 130 135 140
 Phe Leu Ala Gln Leu Ile Ala Ile Arg Val Ser Cys Ser Leu Arg Lys
 145 150 155 160
 Asp Tyr Phe Leu Ala Leu Gln Thr Leu Pro Met Thr Phe Phe His Ala
 165 170 175
 His Asp Met Gly Asn Leu Ser Ser Arg Val Ile Ala Asp Ser Ser Met
 180 185 190
 Ile Ala Leu Ala Ile Asn Ala Leu Met Val Asn Tyr Ile Gln Ala Pro
 195 200 205
 Ile Thr Met Thr Leu Ala Leu Val Val Cys Leu Ser Ile Ser Trp Lys
 210 215 220
 Phe Cys Ala Cys Val Cys Leu Ala Phe Pro Ile Phe Ile Leu Pro Ile
 225 230 235 240
 Val Ile Ile Ala Lys Lys Val Lys Ala Leu Ala Lys Arg Ile Gln Lys
 245 250 255
 Ser Gln Asp His Ser Ala Ala Ala Leu Leu Asp Phe Leu Leu Gly Ile
 260 265 270
 Leu Thr Val Lys Val Phe Arg Thr Glu Gln Phe Ser Phe Ser Lys Tyr
 275 280 285
 Cys Gln Lys Asn Asp Glu Ile Ala Arg Leu Glu Glu Arg Ser Ala Ala
 290 295 300
 Tyr Ser Leu Ile Pro Arg Pro Leu Leu His Thr Ile Ala Ser Leu Phe
 305 310 315 320
 Phe Ala Leu Val Ile Met Ile Gly Leu Tyr His Phe His Ile Pro Pro

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<210> 568
<211> 414
<212> PRT
<213> C. Trachomatis D serovar
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<400> 568															
Met	Phe	Ser	Ser	Ala	Ile	Val	Ile	Leu	Thr	Ala	Ile	Phe	Val	Leu	Cys
1				5					10					15	
Ser	Gly	Phe	Val	Ser	Leu	Ser	His	Ile	Ala	Leu	Phe	Ser	Leu	Pro	Ser
			20					25					30		
Ser	Leu	Ile	Ala	His	Tyr	Ser	His	Ser	Lys	Asn	Arg	Gln	Leu	Arg	Gln
		35					40					45			
Ile	Ala	Asn	Leu	Met	Ala	Tyr	Pro	Asn	His	Leu	Leu	Met	Thr	Leu	Val
	50					55					60				
Phe	Phe	Asp	Ile	Gly	Ile	Asn	Ile	Gly	Val	Gln	Asn	Cys	Ile	Ala	Thr

65 70 75 80
 Leu Val Gly Asp Ser Ala Ser Leu Leu Leu Thr Val Gly Val Pro Leu
 85 90 95
 Ala Leu Thr Leu Val Leu Gly Glu Ile Val Pro Lys Val Ile Ala Ile
 100 105 110
 Pro Tyr Asn Ala Arg Ile Ala Lys Ile Val Thr Pro Ile Ile Phe Ala
 115 120 125
 Ser Thr Lys Ser Phe Arg Pro Ile Phe Asp Trp Ala Ile Ser Gly Ile
 130 135 140
 Asn Phe Ile Val Gln Lys Met Leu Ala Arg Gln Glu Ser Asp Phe Ile
 145 150 155 160
 Gln Pro Gln Glu Leu Lys Glu Val Leu Arg Ser Cys Lys Asp Phe Gly
 165 170 175
 Val Val Asn His Glu Glu Ser Arg Leu Leu Phe Gly Tyr Leu Ser Met
 180 185 190
 Glu Glu Gly Ser Ile Lys Glu Arg Met Thr Pro Lys Gln Glu Ile Ile
 195 200 205
 Phe Tyr Asp Val Leu Thr Pro Ile Glu Asn Leu Tyr Lys Leu Phe Ser
 210 215 220
 Gly Pro Lys Gln Ser Tyr Ser Lys Val Leu Val Cys Lys Gly Gly Leu
 225 230 235 240
 Gln Asn Leu Leu Gly Val Cys Ser Ala Lys Leu Leu Leu Leu Tyr Lys
 245 250 255
 Glu Lys Leu Gln Ser Ala Glu Glu Leu Leu Pro Leu Leu Arg Lys Pro
 260 265 270
 His Tyr Ile Pro Glu Thr Val Ser Ala Lys Thr Ala Leu Tyr His Leu
 275 280 285
 Ala Gly Glu Asp Cys Gly Leu Gly Ile Ile Ile Asp Glu Tyr Gly Ser
 290 295 300
 Ile Glu Gly Leu Ile Thr Gln Asn Asp Leu Phe Lys Ile Val Ser Asp
 305 310 315 320
 Gly Val Ala His Asn Arg Pro Ser Phe Lys Gln Phe Ala His Ser Asp
 325 330 335
 Lys Asn Val Val Ile Ala Ala Gly Thr Tyr Glu Leu Ser Asp Phe Tyr
 340 345 350
 Asp Leu Phe Gly Val Asp Leu Pro Thr Thr Ala Asn Cys Val Thr Ile
 355 360 365
 Gly Gly Trp Leu Thr Glu Gln Leu Gly Glu Ile Pro Glu Thr Gly Thr
 370 375 380
 Lys Phe Ala Trp Gly Gln Phe Val Phe Gln Ile Leu Asp Ala Ala Pro
 385 390 395 400
 Asn Cys Val Lys Arg Val Tyr Ile Arg Lys Thr His Gly Asn
 405 410

<210> 569

<211> 404

<212> PRT

<213> C. Trachomatis D serovar

<400> 569

Met Glu Thr Asn Ser Pro Phe Phe Trp Leu Gly Val Asn Leu Leu Cys
 1 5 10 15
 Ile Phe Val Gln Gly Phe Phe Ser Met Met Glu Met Ala Cys Ile Ser
 20 25 30
 Phe Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Ser Asn Lys Lys
 35 40 45
 Ala Ser Tyr Ile Asn Phe Leu Val Arg Arg Pro Tyr Arg Leu Phe Gly

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<210> 570
<211> 539
<212> PRT
<213> C. Trachomatis D serovar
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<400> 570															
Met	Cys	Cys	Val	Asp	Gly	Ser	Asn	Ser	Ile	Gln	Gln	Arg	Met	Arg	Phe
1				5					10				15		
Cys	Glu	Tyr	Arg	Thr	Ala	Ala	Gln	Glu	Ala	Lys	Thr	Ser	Leu	Ser	Ser
			20					25					30		
Asp	Cys	Ser	Leu	Leu	Glu	Ala	Arg	Leu	Ala	Leu	Arg	Ala	Leu	Ala	Lys

		35					40				45				
His	His	Glu	Tyr	Ser	Ala	Trp	Arg	Glu	Ala	Phe	Leu	Arg	Ser	Gln	Glu
	50					55					60				
Arg	Phe	Pro	Ser	Leu	Glu	Ala	Asp	Arg	Asp	Ile	His	Glu	Asp	Leu	Ala
65					70					75					80
Ala	Ser	Leu	Leu	Gln	Lys	Asn	Ile	Arg	His	Ser	Ser	Leu	Thr	Val	Arg
				85					90					95	
Val	Ile	Thr	Ile	Leu	Ala	Val	Gly	Met	Ala	Arg	Asp	Tyr	Arg	Leu	Val
			100					105					110		
Pro	Ile	Val	Leu	Gln	Ala	Leu	Ser	Asp	Asp	Ser	Asp	Thr	Val	Arg	Glu
		115					120					125			
Ile	Ala	Val	Gln	Val	Ala	Val	Met	Tyr	Gly	Ser	Ser	Cys	Leu	Leu	Arg
	130					135					140				
Ala	Val	Gly	Asp	Leu	Ala	Lys	Asn	Asp	Ser	Ser	Ile	Gln	Val	Arg	Ile
145					150					155					160
Thr	Ala	Tyr	Arg	Ala	Ala	Ala	Val	Leu	Glu	Ile	Gln	Asp	Leu	Val	Pro
				165					170					175	
His	Leu	Arg	Val	Val	Val	Gln	Asn	Thr	Gln	Leu	Asp	Gly	Thr	Glu	Arg
			180					185					190		
Arg	Glu	Ala	Trp	Arg	Ser	Leu	Cys	Val	Leu	Thr	Arg	Pro	His	Ser	Gly
		195					200					205			
Val	Leu	Thr	Gly	Ile	Asp	Gln	Ala	Leu	Met	Thr	Cys	Glu	Met	Leu	Lys
	210					215					220				
Glu	Tyr	Pro	Glu	Lys	Cys	Thr	Glu	Glu	Gln	Ile	Arg	Thr	Leu	Leu	Ala
225					230					235					240
Ala	Asp	His	Pro	Glu	Val	Gln	Val	Ala	Thr	Leu	Gln	Ile	Ile	Leu	Arg
				245					250					255	
Gly	Gly	Arg	Val	Phe	Arg	Ser	Ser	Ser	Ile	Met	Glu	Ser	Val	Gln	Lys
			260					265					270		
Leu	Ala	Cys	Asn	Ser	Leu	Ser	Ala	Arg	Val	Gln	Met	Gln	Ala	Ala	Ala
		275					280					285			
Ile	Leu	Tyr	Leu	Glu	Gly	Asp	Pro	Phe	Gly	Glu	Asp	Lys	Leu	Thr	Glu
	290					295					300				
Gly	Leu	Ser	Ala	Thr	Ser	Ser	Ile	Leu	Cys	Glu	Ala	Ala	Ser	Glu	Ala
305					310					315					320
Val	Cys	Ser	Leu	Gly	Ile	His	Gly	Val	His	Leu	Ala	Gly	Arg	Phe	Leu
				325					330					335	
Ser	Lys	Val	Gln	Gly	Met	Arg	Ser	Arg	Val	Asn	Leu	Ala	Phe	Ala	Leu
			340					345					350		
Leu	Val	Ser	Arg	Glu	Lys	Val	Glu	Ala	Gly	Asp	Val	Val	Ala	Ser	
		355					360				365				
Phe	Ile	His	Arg	Ile	Glu	Pro	Cys	Arg	Ala	Ile	Glu	Gln	Phe	Leu	Cys
	370					375					380				
Glu	Asp	Gln	Lys	Ile	Phe	Val	Ala	Ser	Ser	Pro	Leu	Gln	Val	Glu	Ile
385					390										

Leu Thr Ile Leu Glu Ala Ile Ala Tyr Ser Glu Asn Arg Ile Ala Thr
 500 505 510
 Cys Phe Leu Arg Glu Arg Cys Leu Gln Glu Ala Ala Ser Leu Gln Ser
 515 520 525
 Ala Ala Ala Gly Ala Val Phe Ala Leu Phe Lys
 530 535

<210> 571
 <211> 104
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 571
 Met Gln Thr Ser Arg Ile Ser Ser Phe Phe Arg Gly Leu Val His Leu
 1 5 10 15
 Tyr Arg Trp Ala Ile Ser Pro Phe Leu Gly Ala Pro Cys Arg Phe Phe
 20 25 30
 Pro Thr Cys Ser Glu Tyr Ala Leu Val Ala Leu Lys Lys His Pro Leu
 35 40 45
 Arg Lys Ser Leu Phe Leu Ile Ala Lys Arg Leu Leu Lys Cys Gly Pro
 50 55 60
 Trp Cys Ile Gly Gly Ile Asp Leu Val Pro Arg Thr Ser Val Glu Glu
 65 70 75 80
 Tyr Leu Ser Ser Pro Thr Pro Leu Ala Glu Ser Pro Asp Asp Arg Thr
 85 90 95
 Val Pro His Thr Gln Glu Thr Ser
 100

<210> 572
 <211> 336
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 572
 Met Gln Leu Phe Phe Gly Arg Phe Tyr Glu Val Ala Cys Ile Val Ala
 1 5 10 15
 Ser Ile Leu Arg Glu Arg Asp Val Gly Val Phe Met Gly Ile Glu Gly
 20 25 30
 Arg Gly Ser Gly Ala Met Gln Ser Lys Lys Thr Ile Lys Trp Leu Lys
 35 40 45
 Gln Ala Leu Val Leu Ser Ser Ile Val Asn Ile Leu Leu Leu Leu
 50 55 60
 Ile Tyr Ser Thr Val Phe Arg Lys Asp Ile Tyr Lys Leu Arg Val Phe
 65 70 75 80
 Pro Gly Asn Leu Ile Ala Lys Ser Ser Arg Ile Gly Lys Ile Pro Glu
 85 90 95
 Asp Ile Leu Glu Arg Leu Glu Asn Ala Ser Phe Ala Asp Leu Leu Ala
 100 105 110
 Leu Leu Gln Glu Glu Arg Met Val Phe Gly His Pro Leu Lys Ser Trp
 115 120 125
 Ala Leu Gly Val Ser Ile Gln Lys Tyr Phe Val Asp Ile Ala Pro Met
 130 135 140
 Leu Thr His Pro Leu Thr Phe Ile Arg Leu Lys Ser Pro Glu Arg Thr
 145 150 155 160
 Trp Leu Leu Pro Asp Ile Asn Asp Gln Glu Phe Thr Arg Ile Cys Gln
 165 170 175
 Tyr Leu Leu Thr Glu Arg Phe Pro Phe Ser Ser Arg Gly Phe Phe Arg

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<210> 573
<211> 426
<212> PRT
<213> C. Trachomatis D serovar
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<400> 573															
Met 1	Tyr	Val	Arg	Ser 5	Ile	Phe	Phe	Ser	Ile 10	Ile	Ala	Phe	Leu	Thr 15	Val
Gly	Cys	Ser	Phe 20	Ser	Pro	Pro	Glu	Ser 25	Gly	Leu	Ile	Ile	Ala 30	Ile	His
Asp	Asp	Pro 35	Arg	Ser	Leu	Ser	Pro 40	Glu	Lys	Gly	Glu	Asn 45	Ala	Phe	His
Phe	Ser 50	Leu	Ser	Lys	Ala	Leu 55	Phe	Ala	Thr	Leu	Phe 60	Arg	Glu	Glu	Leu
Ser 65	Gly	Leu	Thr	Pro	Ala 70	Leu	Val	Ser	Ser	Tyr 75	Gln	Val	Ser	Glu	Asp 80
Gly	Arg	Phe	Tyr	Arg 85	Phe	Cys	Ile	Arg	Lys 90	Asp	Ala	Lys	Trp	Ser 95	Asp
Gly	Ser	Leu	Leu 100	Leu	Ala	Glu	Asp	Val 105	Ile	Ala	Ala	Trp	Glu 110	His	Thr
Lys	Gln	Ala 115	Gly	Arg	Tyr	Ser	Leu 120	Leu	Phe	Glu	Lys	Leu 125	Ser	Phe	Arg
Ala	Ser 130	Ser	Ser	Ser	Glu	Ile 135	Leu	Ile	Glu	Leu	Lys 140	Glu	Pro	Glu	Pro
Gln 145	Leu	Leu	Ala	Ile 150	Leu	Ala	Ser	Pro	Phe	Phe 155	Ala	Val	Tyr	Arg	Pro 160
Glu	Asn	Pro	Phe 165	Leu	Ser	Ser	Gly	Pro	Phe 170	Met	Pro	Lys	Thr 175	Tyr	Val
Gln	Gly	Gln	Thr 180	Leu	Val	Leu	Gln	Lys 185	Asn	Pro	Tyr	Tyr 190	Tyr	Asp	His
Ala	His 195	Val	Glu	Leu	His	Ser	Ile 200	Asp	Phe	Arg	Ile	Ile 205	Pro	Asn	Ile
Tyr	Thr 210	Ala	Leu	His	Leu	Leu	Arg 215	Arg	Gly	Asp	Val	Asp	Trp	Val	Gly
Gln 225	Pro	Trp	His	Gln	Gly 230	Ile	Pro	Phe	Glu	Leu 235	Arg	Thr	Thr	Ser	Ala 240
Leu	Tyr	Thr	His	Tyr	Ser	Val	Asp	Gly	Thr	Phe	Trp	Leu	Ile	Leu	Asn

245 250 255
 Pro Lys Asp Pro Val Leu Ser Ser Leu Ser Asn Arg Gln Arg Leu Ile
 260 265 270
 Ala Ala Val Gln Lys Glu Lys Leu Val Lys Gln Ala Leu Gly Thr Gln
 275 280 285
 Tyr Arg Val Ala Glu Ser Ser Pro Ser Pro Glu Gly Ile Ile Ala His
 290 295 300
 Gln Glu Ala Ser Thr Pro Phe Pro Gly Lys Ile Thr Leu Ile Tyr Pro
 305 310 315 320
 Asn Asn Ile Thr Arg Cys Gln Arg Leu Ala Glu Val Leu Gln Glu Gln
 325 330 335
 Cys Arg Asp Ala Gly Ile Gln Leu Thr Leu Glu Gly Leu Glu Tyr His
 340 345 350
 Val Phe Val Gln Lys Arg Ala Thr Gln Asp Phe Ser Val Ser Thr Ala
 355 360 365
 Thr Ser Ile Ala Phe His Pro Leu Ala Lys Ser Lys Phe Asp Gln Thr
 370 375 380
 Ala Leu Asp Asn Phe Thr Cys Leu Pro Leu Tyr His Ile Glu Tyr Asp
 385 390 395 400
 Tyr Ile Leu Ser Arg Pro Leu Asp Gln Ile Val His Tyr Pro Ser Gly
 405 410 415
 Ser Val Asp Leu Thr Tyr Ala His Phe His
 420 425

<210> 574
 <211> 605
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 574
 Met Gln Asn Ile Leu Arg Thr Ser Ser Cys Arg Tyr Met Phe Leu Leu
 1 5 10 15
 Gly Ile Arg Ser Val Trp Asn Arg Val Ala Val Val Asn Asn Phe Arg
 20 25 30
 Gly Ser Ser Trp Lys Ile Val Ala Ile Pro Ser Cys Ile Leu Phe Thr
 35 40 45
 Leu Ile Phe His Leu Pro Arg Trp Leu Ile Asp Phe Gly Val Cys Thr
 50 55 60
 Asn Leu Ala Cys Ser Leu Ser Ile Ile Phe Trp Val Phe Ser Leu Arg
 65 70 75 80
 Ser Ser Ala Ser Ala Arg Ile Phe Pro Ser Leu Leu Leu Tyr Leu Cys
 85 90 95
 Leu Leu Arg Leu Gly Leu Asn Leu Ala Ser Thr Arg Trp Ile Leu Ser
 100 105 110
 Ser Gly Trp Ala Ser Pro Leu Ile Phe Ala Leu Gly Asn Phe Phe Ser
 115 120 125
 Leu Gly Ser Ile Pro Val Ala Leu Thr Val Cys Leu Leu Phe Leu
 130 135 140
 Val Asn Phe Leu Val Ile Thr Lys Gly Ala Glu Arg Ile Ala Glu Val
 145 150 155 160
 Arg Ala Arg Phe Ser Leu Glu Ala Leu Pro Gly Lys Gln Met Ser Leu
 165 170 175
 Asp Ala Asp Ile Ala Ala Gly Arg Ile Gly Tyr Ser Arg Ala Ser Val
 180 185 190
 Lys Lys Ser Ser Leu Leu Glu Glu Ser Asp Tyr Phe Ser Ala Met Glu
 195 200 205
 Gly Val Phe Arg Phe Val Lys Gly Asp Ala Ile Met Ser Trp Val Leu

210	215	220
Leu Gly Val Asn Ile	Leu Ala Ala Leu Phe	Leu Gly Arg Ala Thr His
225	230	235
Val Gly Asp Leu Trp	Leu Thr Val Leu Gly Asp	Ala Leu Val Ser Gln
	245	250
Ile Pro Ala Leu Leu Thr Ser Cys	Ala Ala Ala Thr Leu Ile Ala Lys	
	260	270
Val Gly Glu Lys Glu Ser Leu Ala Gln His	Leu Leu Asp Tyr Tyr Glu	
	275	285
Gln Ser Arg Gln Ser Phe Leu Phe Ile Ala Leu Ile Leu Cys Gly Met		
	290	300
Ala Cys Ile Pro Gly Ala Pro Lys Ala Leu Ile Leu Gly Phe Ser Val		
305	310	315
Leu Leu Phe Leu Gly Tyr Lys Asn Pro Ser Ser Gly Glu Thr Leu Leu		
	325	330
Phe Gln Lys Glu Arg Val Glu Phe Val Leu Pro Asp Glu Gly Val Gly		
	340	345
Asn Pro Ala Asn Leu Tyr Lys Asp Ala Arg Asn Gln Ile Tyr Gln Glu		
	355	360
Leu Gly Val Val Phe Pro Glu Ala Ile Val Val Arg His Val Thr Gly		
	370	375
Ser Ser Pro Arg Leu Ile Phe Ser Gly Gln Glu Val Ala Leu Arg Glu		
385	390	395
Leu Ser Cys Pro Ala Ile Leu Glu Ser Ile Arg Gln Leu Ala Pro Glu		
	405	410
Thr Ile Ser Glu Arg Phe Val Thr Arg Leu Val Asp Glu Phe Arg Glu		
	420	425
His Ala Phe Leu Ser Ile Glu Glu Ile Leu Pro Leu Lys Ile Ser Glu		
	435	440
Asn Ser Leu Ile Phe Leu Leu Arg Ala Leu Val Arg Glu Arg Val Ser		
	450	455
Leu His Leu Phe Pro Lys Ile Leu Glu Ala Ile Asp Val Tyr Gly Ser		
465	470	475
Gln Pro Lys Asn Ser Gln Glu Leu Val Glu Cys Val Arg Lys Tyr Leu		
	485	490
Gly Lys Gln Ile Gly Leu Ser Leu Trp Asn Arg Gln Asp Val Leu Glu		
	500	505
Val Ile Thr Ile Asp Ser Leu Val Glu Gln Phe Val Arg Asp Ser Gln		
	515	520
Glu Lys Val Val Leu Asp Leu Asn Glu Lys Val Val Ala Gln Val Lys		
	530	535
His Leu Leu Arg Val Gly Glu Gly Asn Phe Arg Ala Ile Val Thr Gly		
545	550	555
Ser Glu Thr Arg Lys Glu Leu Lys Arg Ile Val Asp Pro Tyr Phe Pro		
	565	570
Asp Leu Leu Val Leu Ala His Ser Glu Leu Pro Glu Glu Ile Pro Ile		
	580	585
Thr Leu Leu Gly Ala Val Ser Asp Glu Val Leu Leu Ser		
	595	600
		605

<210> 575

<211> 173

<212> PRT

<213> C. Trachomatis D serovar

<400> 575

Met Lys Lys Phe Leu Leu Leu Ser Leu Met Ser Leu Ser Ser Leu Pro

1 5 10 15
 Thr Phe Ala Ala Asn Ser Thr Gly Thr Ile Gly Ile Val Asn Leu Arg
 20 25 30
 Arg Cys Leu Glu Glu Ser Ala Leu Gly Lys Lys Glu Ser Ala Glu Phe
 35 40 45
 Glu Lys Met Lys Asn Gln Phe Ser Asn Ser Met Gly Lys Met Glu Glu
 50 55 60
 Glu Leu Ser Ser Ile Tyr Ser Lys Leu Gln Asp Asp Tyr Met Glu
 65 70 75 80
 Gly Leu Ser Glu Thr Ala Ala Ala Glu Leu Arg Lys Lys Phe Glu Asp
 85 90 95
 Leu Ser Ala Glu Tyr Asn Thr Ala Gln Gly Gln Tyr Tyr Gln Ile Leu
 100 105 110
 Asn Gln Ser Asn Leu Lys Arg Met Gln Lys Ile Met Glu Glu Val Lys
 115 120 125
 Lys Ala Ser Glu Thr Val Arg Ile Gln Glu Gly Leu Ser Val Leu Leu
 130 135 140
 Asn Glu Asp Ile Val Leu Ser Ile Asp Ser Ser Ala Asp Lys Thr Asp
 145 150 155 160
 Ala Val Ile Lys Val Leu Asp Asp Ser Phe Gln Asn Asn
 165 170

<210> 576

<211> 354

<212> PRT

<213> C. Trachomatis D serovar

<400> 576

Met Ser Gln Ser Thr Tyr Ser Leu Glu Gln Leu Ala Asp Phe Leu Lys
 1 5 10 15
 Val Glu Phe Gln Gly Asn Gly Ala Thr Leu Leu Ser Gly Val Glu Glu
 20 25 30
 Ile Glu Glu Ala Lys Thr Ala His Ile Thr Phe Leu Asp Asn Glu Lys
 35 40 45
 Tyr Ala Lys His Leu Lys Ser Ser Glu Ala Gly Ala Ile Ile Ile Ser
 50 55 60
 Arg Thr Gln Phe Gln Lys Tyr Arg Asp Leu Asn Lys Asn Phe Leu Ile
 65 70 75 80
 Thr Ser Glu Ser Pro Ser Leu Val Phe Gln Lys Cys Leu Glu Leu Phe
 85 90 95
 Ile Thr Pro Val Asp Ser Gly Phe Pro Gly Ile His Pro Thr Ala Val
 100 105 110
 Ile His Pro Thr Ala Ile Ile Glu Asp His Val Cys Ile Glu Pro Tyr
 115 120 125
 Ala Val Val Cys Gln His Ala His Val Gly Ser Ala Cys His Ile Gly
 130 135 140
 Ser Gly Ser Val Ile Gly Ala Tyr Ser Thr Val Gly Glu His Ser Tyr
 145 150 155 160
 Ile His Pro Arg Val Val Ile Arg Glu Arg Val Ser Ile Gly Lys Arg
 165 170 175
 Val Ile Ile Gln Pro Gly Ala Val Ile Gly Ser Cys Gly Phe Gly Tyr
 180 185 190
 Val Thr Ser Ala Phe Gly Gln His Lys His Leu Lys His Leu Gly Lys
 195 200 205
 Val Ile Ile Glu Asp Asp Val Glu Ile Gly Ala Asn Thr Thr Ile Asp
 210 215 220
 Arg Gly Arg Phe Lys His Ser Val Val Arg Glu Gly Ser Lys Ile Asp

225 230 235 240
 Asn Leu Val Gln Ile Ala His Gln Val Glu Val Gly Gln His Ser Met
 245 250 255
 Ile Val Ala Gln Ala Gly Ile Ala Gly Ser Thr Lys Ile Gly Asn His
 260 265 270
 Val Ile Ile Gly Gly Gln Ala Gly Ile Thr Gly His Ile Cys Ile Ala
 275 280 285
 Asp His Val Ile Met Met Ala Gln Thr Gly Val Thr Lys Ser Ile Thr
 290 295 300
 Ser Pro Gly Ile Tyr Gly Gly Ala Pro Ala Arg Pro Tyr Gln Glu Ile
 305 310 315 320
 His Arg Gln Val Ala Lys Val Arg Asn Leu Pro Arg Leu Glu Glu Arg
 325 330 335
 Ile Ala Ala Leu Glu Lys Leu Val Gln Lys Leu Glu Ala Leu Ser Glu
 340 345 350
 Gln His

<210> 577
 <211> 421
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 577
 Met Thr Ala Ser Gly Gly Ala Gly Gly Leu Gly Ser Thr Gln Thr Val
 1 5 10 15
 Asp Val Ala Arg Ala Gln Ala Ala Ala Thr Gln Asp Ala Gln Glu
 20 25 30
 Val Ile Gly Ser Gln Glu Ala Ser Glu Ala Ser Met Leu Lys Gly Cys
 35 40 45
 Glu Asp Leu Ile Asn Pro Ala Ala Thr Arg Ile Lys Lys Lys Gly
 50 55 60
 Glu Lys Phe Glu Ser Leu Glu Ala Arg Arg Lys Pro Thr Ala Asp Lys
 65 70 75 80
 Ala Glu Lys Lys Ser Glu Ser Thr Glu Glu Lys Gly Asp Thr Pro Leu
 85 90 95
 Glu Asp Arg Phe Thr Glu Asp Leu Ser Glu Val Ser Gly Glu Asp Phe
 100 105 110
 Arg Gly Leu Lys Asn Ser Phe Asp Asp Ser Ser Pro Asp Glu Ile
 115 120 125
 Leu Asp Ala Leu Thr Ser Lys Phe Ser Asp Pro Thr Ile Lys Asp Leu
 130 135 140
 Ala Leu Asp Tyr Leu Ile Gln Thr Ala Pro Ser Asp Gly Lys Leu Lys
 145 150 155 160
 Ser Thr Leu Ile Gln Ala Lys His Gln Leu Met Ser Gln Asn Pro Gln
 165 170 175
 Ala Ile Val Gly Gly Arg Asn Val Leu Leu Ala Ser Glu Thr Phe Ala
 180 185 190
 Ser Arg Ala Asn Thr Ser Pro Ser Ser Leu Arg Ser Leu Tyr Phe Gln
 195 200 205
 Val Thr Ser Ser Pro Ser Asn Cys Ala Asn Leu His Gln Met Leu Ala
 210 215 220
 Ser Tyr Leu Pro Ser Glu Lys Thr Ala Val Met Glu Phe Leu Val Asn
 225 230 235 240
 Gly Met Val Ala Asp Leu Lys Ser Glu Gly Pro Ser Ile Pro Pro Ala
 245 250 255
 Lys Leu Gln Val Tyr Met Thr Glu Leu Ser Asn Leu Gln Ala Leu His

260 265 270
 Ser Val Asn Ser Phe Phe Asp Arg Asn Ile Gly Asn Leu Glu Asn Ser
 275 280 285
 Leu Lys His Glu Gly His Ala Pro Ile Pro Ser Leu Thr Thr Gly Asn
 290 295 300
 Leu Thr Lys Thr Phe Leu Gln Leu Val Glu Asp Lys Phe Pro Ser Ser
 305 310 315 320
 Ser Lys Ala Gln Lys Ala Leu Asn Glu Leu Val Gly Pro Asp Thr Gly
 325 330 335
 Pro Gln Thr Glu Val Leu Asn Leu Phe Phe Arg Ala Leu Asn Gly Cys
 340 345 350
 Ser Pro Arg Ile Phe Ser Gly Ala Glu Lys Lys Gln Gln Leu Ala Ser
 355 360 365
 Val Ile Thr Asn Thr Leu Asp Ala Ile Asn Ala Asp Asn Glu Asp Tyr
 370 375 380
 Pro Lys Pro Gly Asp Phe Pro Arg Ser Ser Phe Ser Ser Thr Pro Pro
 385 390 395 400
 His Ala Pro Val Pro Gln Ser Glu Ile Pro Thr Ser Pro Thr Ser Thr
 405 410 415
 Gln Pro Pro Ser Pro
 420

<210> 578
 <211> 231
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 578
 Met Met Glu Val Phe Met Asn Phe Leu Asp Gln Leu Asp Leu Ile Ile
 1 5 10 15
 Gln Asn Lys His Met Leu Glu His Thr Phe Tyr Val Lys Trp Ser Lys
 20 25 30
 Gly Glu Leu Thr Lys Glu Gln Leu Ala Tyr Ala Lys Asp Tyr Tyr
 35 40 45
 Leu His Ile Lys Ala Phe Pro Lys Tyr Leu Ser Ala Ile His Ser Arg
 50 55 60
 Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp
 65 70 75 80
 Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val
 85 90 95
 Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser
 100 105 110
 Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly
 115 120 125
 Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln
 130 135 140
 Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe
 145 150 155 160
 Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu
 165 170 175
 Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu
 180 185 190
 Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr
 195 200 205
 Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys
 210 215 220
 Cys Ser Cys His Gln Ser Tyr

225

230

<210> 579

<211> 243

<212> PRT

<213> C. Trachomatis D serovar

<400> 579

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Met Lys Ile Thr Pro Ile Lys Thr Arg Lys Val Phe Ala His Asp Ser
 1          5          10          15
Leu Gln Glu Ile Leu Gln Glu Ala Leu Pro Pro Leu Gln Glu Arg Ser
          20          25          30
Val Val Val Val Ser Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val
          35          40          45
Ala Asp Ala Arg Met Cys Lys Ala Glu Leu Ile Lys Lys Glu Ala Asp
          50          55          60
Ala Tyr Leu Phe Cys Glu Lys Ser Gly Ile Tyr Leu Thr Lys Lys Glu
65          70          75          80
Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn Thr Asp Gln
          85          90          95
Pro Phe Val Leu Tyr Pro Lys Asp Ile Leu Gly Ser Cys Asn Arg Ile
          100          105          110
Gly Glu Trp Leu Arg Asn Tyr Phe Arg Val Lys Glu Leu Gly Val Ile
          115          120          125
Ile Thr Asp Ser His Thr Thr Pro Met Arg Arg Gly Val Leu Gly Ile
130          135          140
Gly Leu Cys Trp Tyr Gly Phe Ser Pro Leu His Asn Tyr Ile Gly Ser
145          150          155          160
Leu Asp Cys Phe Gly Arg Pro Leu Gln Met Thr Gln Ser Asn Leu Val
          165          170          175
Asp Ala Leu Ala Val Ala Ala Val Val Cys Met Gly Glu Gly Asn Glu
          180          185          190
Gln Thr Pro Leu Ala Val Ile Glu Gln Ala Pro Asn Met Val Tyr His
          195          200          205
Ser His Pro Thr Ser Arg Glu Glu Tyr Cys Ser Leu Arg Ile Asp Glu
210          215          220
Thr Glu Asp Leu Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln
225          230          235          240
Glu Lys Lys

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<210> 580

<211> 383

<212> PRT

<213> C. Trachomatis D serovar

<400> 580

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Met Leu Pro His Gln Gln Asn Ser Ser Ser Glu Arg Ala Arg His His
 1          5          10          15
Glu Ser Arg Ser His Arg His Ser Ser Ser Arg His His Val Thr
          20          25          30
Arg Ser Gln Ser Ser Ala Leu Pro Gln Leu Gln Glu Arg Pro Val Pro
          35          40          45
His Pro Leu Ala Glu Arg Glu Leu Ile Ile Phe His Ser Val His Gln
          50          55          60
Gln Gln Asn Asn Asn Pro Leu Arg Met Ile Cys Asp Thr Ile Arg Gln
65          70          75          80

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090413 042301

Ala	Gln	Arg	Gly	Ile	Phe	Met	Arg	Ile	Tyr	Thr	Ile	Ser	Ser	Asp	Asp
				85					90					95	
Ile	Ile	Gln	Ser	Leu	Ile	Gln	Thr	Ser	His	His	Val	Pro	Val	Glu	Val
			100					105					110		
Lys	Tyr	His	Cys	Gly	Glu	Ser	Leu	Pro	Val	Ala	Cys	Gln	Asn	Ser	Arg
		115					120					125			
Val	Val	Leu	Arg	Leu	Thr	Asn	Gly	Arg	Thr	Leu	Gln	His	Lys	Lys	Thr
	130					135					140				
Met	Leu	Ala	Asp	Phe	Gln	Thr	Val	Val	Thr	Gly	Ser	Ala	Asn	Tyr	Thr
145					150					155					160
Asp	Leu	Ser	Leu	Asn	His	Asp	Ala	Asn	Val	Thr	Ala	Cys	Ile	Glu	Ser
				165					170					175	
Ser	Glu	Leu	His	Asp	Ala	Val	Phe	Ser	Glu	Arg	Pro	Gln	Leu	Val	His
			180					185					190		
Val	Gly	Pro	Gln	Leu	Leu	Asn	Tyr	Ile	Pro	Ile	Gln	Arg	Leu	Ile	Pro
		195				200						205			
Asn	Ala	Ala	Ser	Lys	Met	Ile	Leu	Asn	Ala	Ile	Asn	Gln	Ala	Thr	Asp
		210				215					220				
Ser	Ile	Phe	Val	Leu	Met	Tyr	Ile	Phe	Leu	Ser	Pro	Glu	Phe	Phe	Leu
225					230					235					240
Ala	Leu	Ala	Gln	Ala	Met	Arg	Arg	Gly	Val	Arg	Val	Lys	Val	Ile	Ile
				245					250					255	
Asp	Asn	His	Ser	Lys	Gln	Asp	Thr	Cys	Lys	Leu	Leu	Ser	Lys	Leu	Gly
			260					265					270		
Ile	Gln	Leu	Pro	Ile	Tyr	Glu	Arg	Lys	Thr	Glu	Gly	Val	Leu	His	Thr
		275					280					285			
Lys	Ile	Cys	Cys	Ile	Asp	Asn	Lys	Thr	Leu	Ile	Phe	Gly	Ser	Ala	Asn
	290					295					300				
Trp	Ser	Gly	Ala	Gly	Met	Ile	Lys	Asn	Phe	Glu	Asp	Leu	Phe	Ile	Leu
305					310					315					320
Arg	Pro	Ile	Thr	Glu	Thr	Gln	Leu	Gln	Ala	Phe	Met	Asp	Val	Trp	Ser
				325					330					335	
Leu	Leu	Glu	Thr	Asn	Ser	Ser	Tyr	Leu	Ser	Pro	Glu	Ser	Val	Leu	Thr
			340					345					350		
Ala	Pro	Thr	Pro	Ser	Ser	Arg	Pro	Thr	Gln	Gln	Asp	Thr	Asp	Ser	Asp
		355					360					365			
Asp	Glu	Gln	Pro	Ser	Thr	Ser	Gln	Gln	Asp	Ile	Arg	Met	Arg	Lys	
	370					375					380				

<210> 581

<211> 193

<212> PRT

<213> C. Trachomatis D serovar

<400> 581

Met	Trp	Phe	Phe	Leu	Gly	Ser	Pro	Ser	Ala	Ile	Thr	Asn	Phe	Ser	Arg
1				5					10					15	
Val	Asp	Val	Ala	Leu	Asn	Leu	Arg	Ile	Asn	Arg	Gln	Ile	Arg	Ala	Pro
			20					25					30		
Arg	Val	Arg	Val	Ile	Gly	Ser	Ala	Gly	Glu	Gln	Leu	Gly	Ile	Leu	Ser
			35				40					45			
Ile	Lys	Glu	Ala	Leu	Asp	Leu	Ala	Lys	Glu	Ala	Asn	Leu	Asp	Leu	Val
	50					55					60				
Glu	Val	Ala	Ser	Asn	Ser	Glu	Pro	Pro	Val	Cys	Lys	Ile	Met	Asp	Tyr
65					70					75				80	
Gly	Lys	Tyr	Arg	Tyr	Asp	Val	Thr	Lys	Lys	Glu	Lys	Asp	Ser	Lys	Lys
				85					90					95	

<212> PRT

<213> C. Trachomatis D serovar

<400> 583

Met 1	Phe	Thr	Arg	Ile 5	Val	Met	Val	Asp	Leu 10	Gln	Glu	Lys	Gln	Cys 15	Thr
Ile	Val	Lys	Arg	Asn 20	Gly	Met	Phe	Val 25	Pro	Phe	Asp	Arg	Asn 30	Arg	Ile
Phe	Gln	Ala 35	Leu	Glu	Ala	Ala	Phe 40	Arg	Asp	Thr	Arg	Arg 45	Ile	Asp	Asp
His	Met 50	Pro	Leu	Pro	Glu	Asp 55	Leu	Glu	Ser	Ser	Ile 60	Arg	Ser	Ile	Thr
His 65	Gln	Val	Val	Lys	Glu 70	Val	Val	Gln	Lys	Ile 75	Thr	Asp	Gly	Gln	Val 80
Val	Thr	Val	Glu	Arg 85	Ile	Gln	Asp	Met 90	Val	Glu	Ser	Gln	Leu 95	Tyr	Val
Asn	Gly	Leu	Gln 100	Asp	Val	Ala	Arg	Asp 105	Tyr	Ile	Val	Tyr	Arg 110	Asp	Asp
Arg	Lys	Ala 115	His	Arg	Lys	Lys	Ser 120	Trp	Gln	Ser	Leu	Ser 125	Val	Val	Arg
Arg	Cys 130	Gly	Thr	Val	Val	His 135	Phe	Asn	Pro	Met	Lys 140	Ile	Ser	Ala	Ala
Leu 145	Glu	Lys	Ala	Phe	Arg 150	Ala	Thr	Asp	Lys	Thr 155	Glu	Gly	Met	Thr	Pro 160
Ser	Ser	Val	Arg	Glu 165	Glu	Ile	Asn	Ala 170	Leu	Thr	Gln	Asn	Ile 175	Val	Ala
Glu	Ile	Glu	Glu 180	Cys	Cys	Pro	Gln	Gln 185	Asp	Arg	Arg	Ile	Asp 190	Ile	Glu
Lys	Ile	Gln 195	Asp	Ile	Val	Glu	Gln 200	Leu	Met	Val	Val 205	Gly	His	Tyr	
Ala	Val 210	Ala	Lys	Asn	Tyr	Ile 215	Leu	Tyr	Arg	Glu	Ala 220	Arg	Ala	Arg	Val
Arg 225	Asp	Asn	Arg	Glu	Glu 230	Asp	Gly	Ser	Thr	Glu 235	Lys	Thr	Ile	Ala	Glu 240
Glu	Ala	Val	Glu	Val 245	Leu	Ser	Lys	Asp	Gly 250	Ser	Thr	Tyr	Thr 255	Met	Thr
His	Ser	Gln	Leu 260	Ala	Ala	His	Leu	Ala 265	Arg	Ala	Cys	Ser	Arg 270	Phe	Pro
Glu	Thr	Thr 275	Asp	Ala	Ala	Leu	Leu 280	Thr	Asp	Met	Ala	Phe 285	Ala	Asn	Phe
Tyr	Ser 290	Gly	Ile	Lys	Glu	Ser 295	Glu	Val	Val	Leu	Ala 300	Cys	Ile	Met	Ala
Ala 305	Arg	Ala	Asn	Ile	Glu 310	Lys	Glu	Pro	Asp	Tyr 315	Ala	Phe	Val	Ala	Ala 320
Glu	Leu	Leu	Leu 325	Asp	Val	Val	Tyr	Lys	Glu 330	Ala	Leu	Gly	Lys 335	Ser	Lys
Tyr	Ala	Glu	Asp 340	Leu	Glu	Gln	Ala	His 345	Arg	Asp	His	Phe 350	Lys	Arg	Tyr
Ile	Ala	Glu 355	Gly	Asp	Thr	Tyr	Arg 360	Leu	Asn	Ala	Glu	Leu 365	Lys	His	Leu
Phe	Asp 370	Leu	Asp	Ala	Leu	Ala 375	Asp	Ala	Met	Asp	Leu	Ser	Arg	Asp	Leu
Gln 385	Phe	Ser	Tyr	Met	Gly 390	Ile	Gln	Asn	Leu	Tyr 395	Asp	Arg	Tyr	Phe	Asn 400
His	His	Glu	Gly	Cys 405	Arg	Leu	Glu	Thr	Pro 410	Gln	Ile	Phe	Trp	Met	Arg 415

Val	Ala	Met	Gly	Leu	Ala	Leu	Asn	Glu	Gln	Asp	Lys	Thr	Ser	Trp	Ala
			420					425					430		
Ile	Thr	Phe	Tyr	Asn	Leu	Leu	Ser	Thr	Phe	Arg	Tyr	Thr	Pro	Ala	Thr
		435					440					445			
Pro	Thr	Leu	Phe	Asn	Ser	Gly	Met	Arg	His	Ser	Gln	Leu	Ser	Ser	Cys
		450				455					460				
Tyr	Leu	Ser	Thr	Val	Gln	Asp	Asn	Leu	Val	Asn	Ile	Tyr	Lys	Val	Ile
465					470					475					480
Ala	Asp	Asn	Ala	Met	Leu	Ser	Lys	Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp
			485						490					495	
Trp	Thr	Ala	Ile	Arg	Ala	Thr	Gly	Ala	Leu	Ile	Lys	Gly	Thr	Asn	Gly
		500						505					510		
Arg	Ser	Gln	Gly	Val	Ile	Pro	Phe	Ile	Lys	Val	Thr	Asn	Asp	Thr	Ala
		515					520					525			
Val	Ala	Val	Asn	Gln	Gly	Gly	Lys	Arg	Lys	Gly	Ala	Val	Cys	Val	Tyr
		530				535					540				
Leu	Glu	Val	Trp	His	Leu	Asp	Tyr	Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys
545					550					555					560
Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg	Ala	His	Asp	Val	Asn	Ile	Ala	Ser
			565						570					575	
Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys	Arg	Leu	Gln	Gln	Lys	Gly	Thr	Trp
		580						585					590		
Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val	Pro	Gly	Leu	His	Asp	Ala	Tyr	Gly
		595					600					605			
Glu	Glu	Phe	Glu	Arg	Leu	Tyr	Glu	Glu	Tyr	Glu	Arg	Lys	Val	Asp	Thr
		610				615					620				
Gly	Glu	Ile	Arg	Leu	Phe	Lys	Lys	Val	Glu	Ala	Glu	Asp	Leu	Trp	Arg
625					630					635					640
Lys	Met	Leu	Ser	Met	Leu	Phe	Glu	Thr	Gly	His	Pro	Trp	Met	Thr	Phe
			645						650					655	
Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser	Ala	Gln	Asp	His	Lys	Gly	Val	Val
		660						665					670		
Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu	Ile	Leu	Leu	Asn	Cys	Ser	Glu	Thr
		675					680					685			
Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly	Ser	Ile	Asn	Leu	Val	Gln	His	Ile
		690				695					700				
Val	Gly	Asp	Gly	Leu	Asp	Glu	Glu	Lys	Leu	Ser	Glu	Thr	Ile	Ser	Ile
705					710					715					720
Ala	Val	Arg	Met	Leu	Asp	Asn	Val	Ile	Asp	Ile	Asn	Phe	Tyr	Pro	Thr
			725						730					735	
Lys	Glu	Ala	Lys	Glu	Ala	Asn	Phe	Ala	His	Arg	Ala	Ile	Gly	Leu	Gly
		740						745					750		
Val	Met	Gly	Phe	Gln	Asp	Ala	Leu	Tyr	Lys	Leu	Asp	Ile	Ser	Tyr	Ala
		755					760					765			
Ser	Gln	Glu	Ala	Val	Glu	Phe	Ala	Asp	Tyr	Ser	Ser	Glu	Leu	Ile	Ser
		770				775					780				
Tyr	Tyr	Ala	Ile	Gln	Ala	Ser	Cys	Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr
785					790					795					800
Tyr	Ser	Ser	Tyr	Lys	Gly	Ser	Lys	Trp	Asp	Arg	Gly	Leu	Leu	Pro	Ile
			805						810					815	
Asp	Thr	Ile	Gln	Leu	Leu	Ala	Asn	Tyr	Arg	Gly	Glu	Ala	Asn	Leu	Gln
		820						825					830		
Met	Asp	Thr	Ser	Ser	Arg	Lys	Asp	Trp	Glu	Pro	Ile	Arg	Ser	Leu	Val
		835					840					845			
Lys	Glu	His	Gly	Met	Arg	His	Cys	Gln	Leu	Met	Ala	Ile	Ala	Pro	Thr
	850					855					860				
Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly	Val	Thr	Gln	Ser	Ile	Glu	Pro	Thr

260 265 270
 Gln Asp Ala Leu Arg Lys Ile Val Ser Cys Ser Lys Ser Gly Gln Lys
 275 280 285
 Ile Arg Leu Ala Lys Ser Pro Leu Tyr Ser Asp Asn Val Cys Asp Asn
 290 295 300
 Tyr Phe Ser Thr Phe Gln His Asn Val Arg Thr Ile Thr Glu Glu Leu
 305 310 315 320
 Gly Gly Thr Val Leu Glu
 325

<210> 586
 <211> 102
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 586
 Met Gln Asn Lys Arg Lys Val Arg Asp Asp Phe Ile Lys Ile Val Lys
 1 5 10 15
 Asp Val Lys Lys Asp Phe Pro Glu Leu Asp Leu Lys Ile Arg Val Asn
 20 25 30
 Lys Glu Lys Val Thr Phe Leu Asn Ser Pro Leu Glu Leu Tyr His Lys
 35 40 45
 Ser Val Ser Leu Ile Leu Gly Leu Leu Gln Gln Ile Glu Asn Ser Leu
 50 55 60
 Gly Leu Phe Pro Asp Ser Pro Val Leu Glu Lys Leu Glu Asp Asn Ser
 65 70 75 80
 Leu Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp
 85 90 95
 Met Phe Ser Lys Ala Glu
 100

<210> 587
 <211> 243
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 587
 Val Gly Cys Asn Leu Ala Gln Phe Leu Gly Lys Lys Val Leu Leu Ala
 1 5 10 15
 Asp Leu Asp Pro Gln Ser Asn Leu Ser Ser Gly Leu Gly Ala Ser Val
 20 25 30
 Arg Asn Asn Gln Lys Gly Leu His Asp Ile Val Tyr Lys Ser Asn Asp
 35 40 45
 Leu Lys Ser Ile Ile Cys Glu Thr Lys Lys Asp Ser Val Asp Leu Ile
 50 55 60
 Pro Ala Ser Phe Leu Ser Glu Gln Phe Arg Glu Leu Asp Ile His Arg
 65 70 75 80
 Gly Pro Ser Asn Asn Leu Lys Leu Phe Leu Asn Glu Tyr Cys Ala Pro
 85 90 95
 Phe Tyr Asp Ile Cys Ile Ile Asp Thr Pro Pro Ser Leu Gly Gly Leu
 100 105 110
 Thr Lys Glu Ala Phe Val Ala Gly Asp Lys Leu Ile Ala Cys Leu Thr
 115 120 125
 Pro Glu Pro Phe Ser Ile Leu Gly Leu Gln Lys Ile Arg Glu Phe Leu
 130 135 140
 Ser Ser Val Gly Lys Pro Glu Glu Glu His Ile Leu Gly Ile Ala Leu
 145 150 155 160

Ser Phe Trp Asp Asp Arg Asn Ser Thr Asn Gln Met Tyr Ile Asp Ile
 165 170 175
 Ile Glu Ser Ile Tyr Lys Asn Lys Leu Phe Ser Thr Lys Ile Arg Arg
 180 185 190
 Asp Ile Ser Leu Ser Arg Ser Leu Leu Lys Glu Asp Ser Val Ala Asn
 195 200 205
 Val Tyr Pro Asn Ser Arg Ala Glu Asp Ile Leu Lys Leu Thr His
 210 215 220
 Glu Ile Ala Asn Ile Leu His Ile Glu Tyr Glu Arg Asp Tyr Ser Gln
 225 230 235 240
 Arg Thr Thr

<210> 588
 <211> 527
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 588
 Met Pro Ser Leu Ser Gln Ser Arg Arg Ile Ile Gln Gln Ser Ser Ile
 1 5 10 15
 Arg Lys Ile Trp Asn Gln Ile Asp Thr Ser Pro Lys His Gly Val Cys
 20 25 30
 Val Pro Leu Phe Ser Leu Tyr Thr Gln Glu Ser Cys Gly Ile Gly Glu
 35 40 45
 Phe Leu Asp Leu Ile Pro Met Ile Asp Trp Cys Ile Ser Cys Gly Phe
 50 55 60
 Gln Ile Leu Gln Ile Leu Pro Ile Asn Asp Thr Gly Ser Cys Ser Ser
 65 70 75 80
 Pro Tyr Asn Ser Ile Ser Ser Ile Ala Leu Asn Pro Leu His Leu Ser
 85 90 95
 Ile Ser Ala Leu Pro Tyr Lys Glu Glu Val Pro Ala Ala Glu Thr Arg
 100 105 110
 Ile Arg Glu Met Gln Gln Leu Ser Gln Leu Pro Gln Val His Tyr Glu
 115 120 125
 Lys Val Arg Ser Met Lys Arg Asp Phe Phe Gln Glu Tyr Tyr Arg Val
 130 135 140
 Cys Lys Gln Lys Lys Leu Thr Asp His Pro Asp Phe Tyr Ala Phe Cys
 145 150 155 160
 Glu Gln Glu Lys Tyr Trp Leu His Pro Tyr Ala Leu Phe Arg Ser Ile
 165 170 175
 Arg Glu His Leu Asp Asn Leu Pro Ile Asn His Trp Pro Thr Tyr Tyr
 180 185 190
 Thr Asp Leu Ser Gln Ile Thr Glu His Glu Arg Thr Phe Ala Glu Asp
 195 200 205
 Ile Gln Phe His Ser Tyr Leu Gln Tyr Leu Cys Phe Gln Gln Met Thr
 210 215 220
 Gln Val Arg Glu His Ala Asn Cys Lys Ser Cys Leu Ile Lys Gly Asp
 225 230 235 240
 Ile Pro Ile Leu Ile Ser Lys Asp Ser Cys Asp Val Trp Phe Tyr Arg
 245 250 255
 His Tyr Phe Ser Ser Ser Glu Ser Val Gly Ala Pro Pro Asp Leu Tyr
 260 265 270
 Asn Ala Glu Gly Gln Asn Trp His Leu Pro Ile Cys Asn Met Lys Thr
 275 280 285
 Leu Gln Gln Asp Asn Tyr Leu Trp Trp Lys Glu Arg Leu Arg Tyr Ala
 290 295 300

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Glu Asn Phe Tyr Ser Leu Tyr Arg Leu Asp His Val Val Gly Leu Phe
 305 310 315 320
 Arg Phe Trp Val Trp Asp Glu Ser Gly Cys Gly Arg Phe Glu Pro His
 325 330 335
 Asp Pro Lys Asn Tyr Leu Ala Gln Gly Gln Asp Ile Leu Ser His Leu
 340 345 350
 Leu Thr Ser Ser Ser Met Leu Pro Ile Gly Glu Asp Leu Gly Thr Ile
 355 360 365
 Pro Ser Asp Val Lys Arg Met Leu Glu Ser Phe Ala Val Cys Gly Thr
 370 375 380
 Arg Ile Pro Arg Trp Glu Arg Asn Trp Glu Gly Asn Gly Ala Tyr Thr
 385 390 395 400
 Pro Phe Asp Gln Tyr Asp Pro Leu Ser Val Thr Ser Leu Ser Thr His
 405 410 415
 Asp Ser Ser Thr Leu Ala Ser Trp Trp Lys Glu Ser Pro Gln Glu Ser
 420 425 430
 Lys Leu Phe Ala Gln Phe Leu Gly Leu Pro Tyr Ser Ser Thr Leu Ser
 435 440 445
 Leu His Asn His Thr Glu Ile Leu Lys Leu Ser His Lys Thr Ser Ser
 450 455 460
 Ile Phe Arg Ile Asn Leu Ile Asn Asp Tyr Leu Ala Leu Phe Pro Asp
 465 470 475 480
 Leu Ile Ser Lys Thr Pro Arg Tyr Glu Arg Ile Asn Leu Pro Gly Thr
 485 490 495
 Ile Ser Lys Asn Asn Trp Val Tyr Arg Val Lys Pro Ser Ile Glu Asp
 500 505 510
 Leu Ser Ser His Ser Lys Leu Asn Ser Leu Leu Glu Ala Leu Phe
 515 520 525

<210> 589

<211> 146

<212> PRT

<213> C. Trachomatis D serovar

<400> 589

Met Gln Asn Gln Phe Glu Gln Leu Leu Thr Glu Leu Gly Thr Gln Ile
 1 5 10 15
 Asn Ser Pro Leu Thr Pro Asp Ser Asn Asn Ala Cys Ile Val Arg Phe
 20 25 30
 Gly Tyr Asn Asn Val Ala Val Gln Ile Glu Glu Asp Gly Asn Ser Gly
 35 40 45
 Phe Leu Val Ala Gly Val Met Leu Gly Lys Leu Pro Glu Asn Thr Phe
 50 55 60
 Arg Gln Lys Ile Phe Lys Ala Ala Leu Ser Ile Asn Gly Ser Pro Gln
 65 70 75 80
 Ser Asn Ile Lys Gly Thr Leu Gly Tyr Gly Glu Ile Ser Asn Gln Leu
 85 90 95
 Tyr Leu Cys Asp Arg Leu Asn Met Thr Tyr Leu Asn Gly Glu Lys Leu
 100 105 110
 Ala Arg Tyr Leu Val Leu Phe Ser Gln His Ala Asn Ile Trp Met Gln
 115 120 125
 Ser Ile Ser Lys Gly Ala Leu Pro Asp Leu His Ala Leu Gly Met Tyr
 130 135 140
 His Leu
 145

<210> 590

<211> 650
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 590

Met	Thr	Ile	Pro	Ile	His	Glu	Asn	Lys	Tyr	Ser	Met	Ile	Ser	Phe	Thr
1				5					10					15	
Arg	Thr	Ile	Gly	Phe	Arg	Leu	Trp	Leu	Ile	Cys	Val	Ala	Ala	Ile	Met
			20					25					30		
Phe	Pro	Leu	Gly	Ile	Asn	Ile	Leu	Gln	Leu	Asn	Leu	Gln	Gln	Tyr	Lys
		35					40					45			
Lys	Thr	Leu	Ser	Ser	Ile	Thr	Ser	Asp	Leu	Arg	Glu	Asn	Ala	Leu	Phe
	50					55					60				
Lys	Ala	His	Thr	Leu	Gln	Gln	Thr	Ile	Pro	Leu	Asn	Ile	Asp	Ile	Leu
65					70					75					80
Ala	Leu	Phe	Ser	Glu	Ile	Phe	Asp	Leu	Asp	Arg	Gly	Val	Pro	Ala	Glu
				85					90					95	
Pro	Asp	Leu	Ala	Leu	Ser	Lys	Glu	Met	Glu	Lys	Ile	Phe	His	Ser	Thr
			100					105					110		
Tyr	Lys	Glu	Ile	Ser	Leu	Val	Lys	Lys	Glu	Ala	Asp	Gly	Asn	Phe	Arg
		115					120					125			
Val	Val	Ala	Ser	Ser	Arg	Ile	Glu	Gln	Leu	Gly	Lys	Asn	Tyr	Asn	Gln
	130					135					140				
Glu	Ile	Phe	Leu	Ser	Asp	Ser	Gln	Pro	Phe	Leu	Ala	Thr	Leu	Arg	His
145					150					155					160
Ser	Gly	Ser	Asp	Ser	Gln	Val	Leu	Ala	Val	Leu	Gln	Thr	Asn	Ile	Phe
				165					170					175	
Asp	Ile	Ser	Ser	Gln	Glu	Val	Leu	Gly	Val	Leu	Tyr	Thr	Leu	Ser	Asp
			180					185					190		
Thr	Asn	Tyr	Leu	Leu	Asn	Gly	Leu	Leu	Ala	Ala	Lys	Asp	Pro	Leu	Ser
		195					200					205			
Val	Lys	Thr	Ala	Ile	Leu	Ser	Lys	Asn	Gly	Ile	Ile	Leu	Gln	Ala	Thr
	210					215					220				
Asp	Ser	Ser	Leu	Asp	Leu	Val	Ser	Ile	His	Lys	Thr	Val	Ser	Lys	Glu
225				230						235					240
Gln	Phe	Cys	Asp	Val	Phe	Leu	Arg	Asp	Asp	Ile	Cys	Pro	Pro	His	Leu
				245					250					255	
Leu	Leu	Arg	Pro	Pro	Leu	Asn	Leu	Asp	Pro	Leu	Pro	Tyr	Gly	Glu	Asn
			260					265					270		
Phe	Val	Ser	Phe	Cys	Ile	Gly	Asn	Thr	Glu	Met	Trp	Gly	Tyr	Ile	His
		275					280					285			
Ser	Leu	Pro	Glu	Met	Asp	Phe	Arg	Ile	Leu	Thr	Tyr	Glu	Glu	Lys	Ser
	290					295					300				
Ile	Ile	Phe	Ala	Ser	Leu	Trp	Arg	Arg	Thr	Leu	Leu	Tyr	Phe	Ala	Tyr
305					310					315					320
Phe	Cys	Cys	Val	Leu	Leu	Gly	Ser	Ile	Thr	Ala	Phe	Leu	Val	Ala	Lys
				325					330					335	
Arg	Leu	Ser	Lys	Pro	Ile	Arg	Lys	Leu	Ala	Thr	Ala	Met	Met	Glu	Thr
			340					345					350		
Arg	Arg	Asn	Gln	His	His	Pro	Tyr	Glu	Pro	Asp	Ser	Leu	Gly	Phe	Glu
		355					360					365			
Ile	Asn	His	Leu	Gly	Glu	Ile	Phe	Asn	Ser	Met	Val	Gln	Ser	Leu	Leu
	370					375					380				
Gln	Gln	Gln	Ser	Leu	Ala	Glu	Lys	Asn	Phe	Glu	Ile	Lys	Gln	His	Ala
385					390					395					400
Gln	Asn	Ala	Leu	Arg	Leu	Gly	Glu	Glu	Ala	Gln	Gln	Cys	Leu	Leu	Pro
				405					410					415	

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<210> 591
<211> 313
<212> PRT
<213> C. Trachomatis D serovar
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<400> 591															
Met 1	Leu	Ser	Tyr	Ile 5	Lys	Arg	Arg	Leu	Leu 10	Phe	Asn	Leu	Leu	Ser 15	Leu
Trp	Val	Val	Val 20	Thr	Leu	Thr	Phe	Phe 25	Ile	Ile	Lys	Thr	Ile 30	Pro	Gly
Asp	Pro	Phe 35	Asn	Asp	Glu	Asn	Gly 40	Asn	Ile	Leu	Ser	Ser 45	Glu	Thr	Leu
Ala	Leu 50	Leu	Lys	Asn	Arg	Tyr 55	Gly	Leu	Asp	Lys	Pro 60	Leu	Phe	Thr	Gln
Tyr 65	Leu	Ile	Tyr	Leu	Lys 70	Cys	Leu	Leu	Thr	Leu 75	Asp	Phe	Gly	Glu	Ser 80
Leu	Ile	Tyr	Lys	Asp 85	Arg	Thr	Val	Ile	Ser 90	Ile	Ile	Ala	Ala	Ala 95	Leu
Pro	Ser	Ser	Ala 100	Ile	Leu	Gly	Leu	Glu 105	Ser	Leu	Cys	Leu	Ser	Leu 110	Phe
Gly	Gly	Ile	Thr	Leu	Gly	Ile	Leu	Ala 120	Ala	Phe	Tyr	Lys 125	Lys	Ser	Cys
Gly	Arg 130	Thr	Ile	Phe	Phe	Ser 135	Ser	Val	Ile	Gln	Ile 140	Ser	Val	Pro	Ala
Phe 145	Val	Ile	Gly	Ala	Phe 150	Leu	Gln	Tyr	Val	Phe 155	Ala	Ile	Lys	Tyr	Ser 160

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<210> 592
<211> 1237
<212> PRT
<213> C. Trachomatis D serovar
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<400>	592															
Met	Thr	Trp	Ile	Pro	Leu	His	Cys	His	Ser	Gln	Tyr	Ser	Ile	Leu	Asp	
1				5					10					15		
Ala	Thr	Cys	Ser	Ile	Lys	Lys	Phe	Val	Ala	Lys	Ala	Val	Glu	Tyr	Gln	
			20					25					30			
Ile	Pro	Ala	Leu	Ala	Leu	Thr	Asp	His	Gly	Asn	Leu	Phe	Gly	Ala	Val	
		35					40					45				
Glu	Phe	Tyr	Lys	Thr	Cys	Lys	Gln	Asn	Ala	Ile	Lys	Pro	Ile	Ile	Gly	
	50					55					60					
Cys	Glu	Leu	Tyr	Val	Ala	Pro	Ser	Ser	Arg	Phe	Asp	Lys	Lys	Lys	Glu	
65				70						75					80	
Arg	Lys	Ser	Arg	Val	Ala	Asn	His	Leu	Ile	Leu	Leu	Cys	Lys	Asp	Glu	
				85					90					95		
Glu	Gly	Tyr	Arg	Asn	Leu	Cys	Leu	Leu	Ser	Ser	Leu	Ala	Tyr	Thr	Glu	
			100					105					110			
Gly	Phe	Tyr	Tyr	Val	Pro	Arg	Ile	Asp	Arg	Asp	Leu	Leu	Ser	Gln	His	
		115					120					125				
Ser	Lys	Gly	Leu	Ile	Cys	Leu	Ser	Ala	Cys	Leu	Ser	Gly	Ser	Val	Ala	
	130					135					140					
Gln	Ala	Ala	Leu	Glu	Ser	Glu	Glu	Asp	Leu	Glu	Lys	Asp	Leu	Leu	Trp	
145				150						155					160	
Tyr	Gln	Asp	Leu	Phe	Gln	Glu	Asp	Phe	Phe	Ser	Glu	Val	Gln	Leu	His	
				165					170					175		
Lys	Ser	Ser	Glu	Glu	Lys	Val	Ala	Leu	Phe	Glu	Glu	Thr	Trp	Leu	Lys	
			180					185					190			
Gln	Asn	Tyr	Tyr	Gln	Phe	Ile	Glu	Lys	Gln	Leu	Lys	Val	Asn	Glu	Ala	
		195					200					205				
Val	Leu	Ala	Thr	Ser	Lys	Arg	Leu	Gly	Ile	Pro	Ser	Val	Ala	Thr	Asn	
	210					215					220					
Asp	Ile	His	Tyr	Leu	Asn	Pro	Asp	Asp	Trp	Leu	Ala	His	Glu	Ile	Leu	
225				230						235					240	

Leu	Asn	Val	Gln	Ser	Arg	Glu	Pro	Ile	Arg	Thr	Ala	Lys	Gln	Asn	Thr
				245					250					255	
Tyr	Ile	Pro	Asn	Pro	Lys	Arg	Lys	Thr	Tyr	Pro	Ser	Arg	Glu	Phe	Tyr
			260					265					270		
Phe	Lys	Ser	Pro	Gln	Glu	Ile	Ala	Glu	Leu	Phe	Ala	Ala	His	Pro	Glu
		275					280					285			
Thr	Ile	Thr	Asn	Thr	Cys	Ile	Val	Ala	Glu	Arg	Cys	His	Leu	Glu	Leu
	290					295					300				
Asp	Phe	Glu	Thr	Lys	His	Tyr	Pro	Ile	Tyr	Val	Pro	Glu	Ala	Leu	Gln
305					310					315					320
Lys	Lys	Gly	Ser	Tyr	Thr	Glu	Glu	Glu	Arg	Tyr	Lys	Ala	Ser	Ser	Ala
				325					330					335	
Phe	Leu	Glu	Glu	Leu	Cys	Glu	Gln	Gly	Leu	Thr	Ser	Lys	Tyr	Thr	Pro
			340					345					350		
Glu	Leu	Leu	Gly	His	Ile	Ala	Lys	Lys	Phe	Pro	Gly	Glu	Asp	Pro	Leu
		355					360					365			
Thr	Leu	Val	Lys	Glu	Arg	Leu	Lys	Leu	Glu	Ser	Ser	Ile	Ile	Ile	Ser
	370					375					380				
Lys	Gly	Met	Cys	Asp	Tyr	Leu	Leu	Ile	Val	Trp	Asp	Ile	Ile	Asn	Trp
385					390					395					400
Ala	Lys	Asp	His	Gly	Ile	Pro	Val	Gly	Pro	Gly	Arg	Gly	Ser	Gly	Ala
				405					410					415	
Gly	Ser	Val	Met	Leu	Phe	Leu	Leu	Gly	Ile	Thr	Glu	Ile	Glu	Pro	Ile
			420					425					430		
Arg	Phe	Asp	Leu	Phe	Phe	Glu	Arg	Phe	Ile	Asn	Pro	Glu	Arg	Ile	Ser
		435					440					445			
Tyr	Pro	Asp	Ile	Asp	Ile	Asp	Ile	Cys	Met	Ile	Gly	Arg	Glu	Arg	Val
	450					455					460				
Ile	Asn	Tyr	Ala	Ile	Glu	Arg	His	Gly	Lys	Asp	Asn	Val	Ala	Gln	Ile
465					470					475					480
Ile	Thr	Phe	Gly	Thr	Met	Lys	Ala	Lys	Met	Ala	Ile	Lys	Asp	Val	Gly
				485					490					495	
Arg	Thr	Leu	Asp	Thr	Pro	Leu	Ala	Lys	Val	Asn	Phe	Ile	Ala	Lys	His
			500					505					510		
Ile	Pro	Asp	Leu	Asn	Ala	Thr	Ile	Thr	Ser	Ala	Leu	Glu	Ala	Asp	Pro
		515					520					525			
Glu	Leu	Arg	Gln	Leu	Tyr	Val	Asp	Asp	Ala	Glu	Ala	Ala	Glu	Val	Ile
	530					535					540				
Asp	Met	Ala	Lys	Lys	Leu	Glu	Gly	Ser	Ile	Arg	Asn	Thr	Gly	Val	His
545					550					555					560
Ala	Ala	Gly	Val	Ile	Ile	Cys	Gly	Asp	Pro	Leu	Thr	Asn	His	Ile	Pro
				565					570					575	
Ile	Cys	Val	Pro	Lys	Asp	Ser	Ser	Met	Ile	Ser	Thr	Gln	Tyr	Ser	Met
			580					585					590		
Lys	Pro	Val	Glu	Ser	Val	Gly	Met	Leu	Lys	Val	Asp	Phe	Leu	Gly	Leu
		595					600					605			
Lys	Thr	Leu	Thr	Gly	Ile	His	Ile	Ala	Thr	Gln	Ala	Ile	Tyr	Lys	Lys
	610					615					620				
Thr	Gly	Ile	Leu	Leu	Arg	Ala	Ala	Thr	Ile	Pro	Leu	Asp	Asp	Gln	Asn
625					630					635					640
Thr	Phe	Ser	Leu	Leu	His	Gln	Gly	Lys	Thr	Met	Gly	Ile	Phe	Gln	Met
				645					650					655	
Glu	Ser	Arg	Gly	Met	Gln	Asp	Leu	Ala	Lys	Asn	Leu	Arg	Pro	Asp	Ala
			660					665					670		
Phe	Glu	Glu	Ile	Ile	Ala	Ile	Gly	Ala	Leu	Tyr	Arg	Pro	Gly	Pro	Met
		675					680					685			
Asp	Met	Ile	Pro	Ser	Phe	Ile	Asn	Arg	Lys	His	Gly	Lys	Glu	Asn	Ile

690					695					700					
Glu 705	Tyr	Asp	His	Pro	Leu 710	Met	Glu	Pro	Ile	Leu 715	Lys	Glu	Thr	Phe	Gly 720
Ile	Met	Val	Tyr	Gln 725	Glu	Gln	Val	Met	Gln 730	Ile	Ala	Gly	Ser	Leu 735	Ala
Lys	Tyr	Ser	Leu 740	Gly	Glu	Gly	Asp	Val 745	Leu	Arg	Arg	Ala	Met 750	Gly	Lys
Lys	Asp	His 755	Glu	Gln	Met	Val	Lys 760	Glu	Arg	Glu	Lys	Phe 765	Cys	Ser	Arg
Ala 770	Ala	Ala	Asn	Gly	Ile	Asp 775	Pro	Ser	Ile	Ala	Thr 780	Thr	Ile	Phe	Asp
Lys 785	Met	Glu	Lys	Phe 790	Ala	Ser	Tyr	Gly	Phe 795	Asn	Lys	Ser	His	Ala	Ala 800
Ala	Tyr	Gly	Leu 805	Ile	Thr	Tyr	Thr	Thr 810	Ala	Tyr	Leu	Lys	Ala	Asn 815	Tyr
Pro	Lys	Glu	Trp 820	Leu	Ala	Ala	Leu	Leu 825	Thr	Cys	Asp	Tyr	Asp 830	Asp	Ile
Glu	Lys	Val 835	Gly	Lys	Leu	Ile	Gln 840	Glu	Ala	His	Ser	Met 845	Asn	Ile	Leu
Val 850	Leu	Pro	Pro	Asp	Ile	Asn 855	Glu	Ser	Gly	Gln	Asp 860	Phe	Glu	Ala	Thr
Gln 865	Lys	Gly	Ile	Arg	Phe 870	Ser	Leu	Gly	Ala	Val 875	Lys	Gly	Val	Gly	Met 880
Ser	Ile	Val	Asp 885	Ser	Ile	Val	Glu	Glu	Arg 890	Glu	Lys	Asn	Gly	Pro 895	Tyr
Lys	Ser	Leu	Gln 900	Asp	Phe	Val	Gln	Arg 905	Ala	Asp	Phe	Lys	Lys 910	Val	Thr
Lys	Lys	Gln 915	Leu	Glu	Asn	Leu	Val 920	Asp	Ala	Gly	Thr	Phe 925	Asp	Cys	Phe
Glu	Pro	Asn 930	Lys	Asp	Leu	Ala 935	Leu	Ala	Ile	Leu	Asn 940	Asp	Leu	Tyr	Asp
Thr 945	Phe	Ser	Arg	Glu	Lys 950	Lys	Glu	Ala	Ala	Thr 955	Gly	Val	Leu	Thr	Phe 960
Phe	Ser	Leu	Asp 965	Ser	Met	Ala	Arg	Asp 970	Pro	Val	Lys	Ile	Thr	Val 975	Ser
Pro	Glu	Asn 980	Val	Ile	Gln	Arg	Ser	Pro 985	Lys	Glu	Leu	Leu	Lys 990	Arg	Glu
Lys	Glu	Leu 995	Leu	Gly	Val	Tyr	Leu 1000	Thr	Ala	His	Pro	Met 1005	Asp	Ala	Val
Glu	His	Met 1010	Leu	Pro	Phe	Leu 1015	Ser	Val	Val	Pro	Ala 1020	Arg	Asp	Phe	Glu
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Ala	Ile	Leu 1090	Ala	Ile	Asp	Arg 1095	Arg	Ser	Asp	Ser	Leu 1100	Arg	Leu	Ser	Cys
Arg 1105	Trp	Met	Arg	Asp	Leu 1110	Ser	Thr	Val	Asn	Asp	Ser 1115	Val	Ile	Ala	Glu 1120
Cys	Asp	Glu	Val	Tyr 1125	Asp	Arg	Leu	Lys	Ser	Gln	Lys	Val	Tyr	Ser	Ser 1135
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Leu Ala Lys Asp Ile Gln Lys Thr Ile Gly Pro Asp Val Leu Ala Ser
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 Met Val His Tyr Gln His Gln Leu Leu Ser His Leu His Glu Thr Leu
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 Arg Ser Gln Leu Glu Lys Arg Ala Tyr Leu Phe Pro Ile Pro Asn Asn
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 Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr Lys Phe Thr
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 Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser Asn Ser Ser
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 Thr Thr Thr Pro Asp Pro Lys Gly Gly Gly Ala Phe Tyr Asn Ala His
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 Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu Gly Ser Leu
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Ser	Leu	Ser	Gly	Ile	Thr	Lys	Ala	Thr	Phe	Ser	Ser	Asn	Ser	Ala	Glu
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Ser	Glu	Thr	Ser	Gly	Ser	Ser	Ser	Ser	Ser	Gly	Asn	Asp	Ser	Val	Ser
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Ser	Pro	Ser	Ser	Ser	Arg	Ala	Glu	Pro	Ala	Ala	Ala	Asn	Leu	Gln	Ser
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His	Phe	Ile	Cys	Ala	Thr	Ala	Thr	Pro	Ala	Ala	Gln	Thr	Asp	Thr	Glu
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Thr	Ser	Thr	Pro	Ser	His	Lys	Pro	Gly	Ser	Gly	Gly	Ala	Ile	Tyr	Ala
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Arg	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ser	Asp	Lys	Gln	Gly	Gly	Gly	Ile
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Tyr	Gly	Glu	Asp	Asn	Ile	Thr	Leu	Ser	Asn	Leu	Thr	Gly	Lys	Thr	Leu
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Gln	Ser	Ile	Ser	Ile	Ser	Gly	Asn	Ser	Ala	Ala	Glu	Asn	Gly	Gly	Gly		
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Phe Ser Gln Ser Trp Glu Leu Gly Lys Phe Asn Glu Ser Arg Lys Leu
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Ser Asn Gly Thr Leu Leu Glu Ile Ala Lys Ile Tyr Pro Met Asp Ala
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Tyr Thr Ala His Arg Ile Thr Ser Ser Glu Glu Glu Ser Asp Asn Glu
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 Lys Ile Ser Leu Gly Leu Lys Gln Thr Glu Arg Asn Pro Trp Asp Asn
 370 375 380
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu His Val Asn Ala Glu Ile Lys
 385 390 395 400
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu
 405 410 415
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His
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 Pro Ser Glu Leu Phe Lys Lys Gly Asn Ser Val Glu Ala Val Ile Leu
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 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu
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 465 470 475 480
 Val Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val
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 Asp Lys Pro Phe Ala Lys Ile Glu Asp Ile Ile Ser Ile Gly Glu Asn
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Ile 65	Pro	Tyr	Tyr	Thr	Val 70	Ser	Phe	Ser	Lys	Glu 75	Tyr	Lys	Glu	Arg	Val 80
Phe	Ser	Arg	Phe	Leu 85	Arg	Glu	Tyr	Ala	Asn 90	Gly	Tyr	Thr	Pro	Asn 95	Pro
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Val	Arg	Glu 115	Leu	Lys	Gly	Asp	Phe 120	Leu	Ala	Thr	Gly	His 125	Tyr	Cys	Arg
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Asp 145	Gln	Ser	Tyr	Phe	Leu 150	Cys	Gly	Thr	Pro	Lys 155	Asp	Ala	Leu	Ser	Asn 160
Val	Leu	Phe	Pro	Leu 165	Gly	Gly	Met	Tyr	Lys 170	Thr	Glu	Val	Arg	Arg 175	Ile
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Ile	Cys	Phe 195	Ile	Gly	Lys	Arg	Pro 200	Phe	Lys	Ser	Phe	Leu 205	Glu	Gln	Phe
Val	Ala 210	Asp	Ser	Pro	Gly	Asp 215	Ile	Ile	Asp	Phe	Asp 220	Thr	Gln	Gln	Val
Val 225	Gly	Arg	His	Glu	Gly 230	Ala	His	Tyr	Tyr	Thr 235	Ile	Gly	Gln	Arg	Arg 240
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Leu	Leu	Tyr 275	Arg	Gln	Glu	Leu	Leu 280	Ala	Lys	Glu	Leu	Asn 285	Trp	Phe	Val
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Pro 305	Asp	Glu	Lys	Cys	Ser 310	Val	Tyr	Pro	Leu	Glu 315	Asp	Gly	Thr	Val	Lys 320
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325

330

335

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Pro Met Ile His Gln Leu
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